Chapter 19  Share-Based Compensation and Earnings Per Share

AACSB assurance of learning standards in accounting and business education require documentation of outcomes assessment. Although schools, departments, and faculty may approach assessment and its documentation differently, one approach is to provide specific questions on exams that become the basis for assessment. To aid faculty in this endeavor, we have labeled each question, exercise, and problem in *Intermediate Accounting, 7e*, with the following AACSB learning skills:

<table>
<thead>
<tr>
<th>Questions</th>
<th>AACSB Tags</th>
<th>Exercises</th>
<th>AACSB Tags</th>
</tr>
</thead>
<tbody>
<tr>
<td>19–1</td>
<td>Reflective thinking</td>
<td>19–1</td>
<td>Analytic</td>
</tr>
<tr>
<td>19–2</td>
<td>Reflective thinking</td>
<td>19–2</td>
<td>Analytic</td>
</tr>
<tr>
<td>19–3</td>
<td>Reflective thinking</td>
<td>19–3</td>
<td>Analytic</td>
</tr>
<tr>
<td>19–4</td>
<td>Reflective thinking</td>
<td>19–4</td>
<td>Analytic</td>
</tr>
<tr>
<td>19–5</td>
<td>Reflective thinking</td>
<td>19–5</td>
<td>Analytic</td>
</tr>
<tr>
<td>19–6</td>
<td>Reflective thinking</td>
<td>19–6</td>
<td>Analytic</td>
</tr>
<tr>
<td>19–7</td>
<td>Analytic</td>
<td>19–7</td>
<td>Analytic</td>
</tr>
<tr>
<td>19–8</td>
<td>Reflective thinking</td>
<td>19–8</td>
<td>Analytic</td>
</tr>
<tr>
<td>19–9</td>
<td>Reflective thinking</td>
<td>19–9</td>
<td>Analytic</td>
</tr>
<tr>
<td>19–10</td>
<td>Reflective thinking</td>
<td>19–10</td>
<td>Analytic</td>
</tr>
<tr>
<td>19–11</td>
<td>Reflective thinking</td>
<td>19–11</td>
<td>Analytic</td>
</tr>
<tr>
<td>19–12</td>
<td>Reflective thinking, Communications</td>
<td>19–12</td>
<td>Analytic</td>
</tr>
<tr>
<td>19–13</td>
<td>Reflective thinking</td>
<td>19–13</td>
<td>Analytic</td>
</tr>
<tr>
<td>19–14</td>
<td>Reflective thinking</td>
<td>19–14</td>
<td>Analytic</td>
</tr>
<tr>
<td>19–15</td>
<td>Analytic</td>
<td>19–15</td>
<td>Analytic</td>
</tr>
<tr>
<td>19–16</td>
<td>Reflective thinking</td>
<td>19–16</td>
<td>Analytic</td>
</tr>
<tr>
<td>19–17</td>
<td>Reflective thinking</td>
<td>19–17</td>
<td>Analytic</td>
</tr>
<tr>
<td>19–18</td>
<td>Reflective thinking</td>
<td>19–18</td>
<td>Analytic</td>
</tr>
<tr>
<td>19–19</td>
<td>Reflective thinking</td>
<td>19–19</td>
<td>Analytic</td>
</tr>
<tr>
<td></td>
<td></td>
<td>19–20</td>
<td>Analytic</td>
</tr>
</tbody>
</table>

**Brief Exercises**

<table>
<thead>
<tr>
<th>Questions</th>
<th>AACSB Tags</th>
<th>Exercises</th>
<th>AACSB Tags</th>
</tr>
</thead>
<tbody>
<tr>
<td>19–1</td>
<td>Analytic</td>
<td>19–21</td>
<td>Analytic</td>
</tr>
<tr>
<td>19–2</td>
<td>Analytic</td>
<td>19–22</td>
<td>Analytic</td>
</tr>
<tr>
<td>19–3</td>
<td>Analytic</td>
<td>19–23</td>
<td>Analytic</td>
</tr>
<tr>
<td>19–4</td>
<td>Analytic</td>
<td>19–24</td>
<td>Reflective thinking</td>
</tr>
<tr>
<td>19–5</td>
<td>Analytic</td>
<td>19–25</td>
<td>Communications</td>
</tr>
<tr>
<td>19–6</td>
<td>Analytic</td>
<td>19–26</td>
<td>Communications</td>
</tr>
<tr>
<td>19–7</td>
<td>Analytic</td>
<td>19–27</td>
<td>Analytic</td>
</tr>
<tr>
<td>19–8</td>
<td>Analytic</td>
<td>19–28</td>
<td>Analytic</td>
</tr>
<tr>
<td>19–9</td>
<td>Analytic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19–10</td>
<td>Analytic</td>
<td>1</td>
<td>Analytic</td>
</tr>
<tr>
<td>19–11</td>
<td>Analytic</td>
<td>2</td>
<td>Analytic</td>
</tr>
<tr>
<td>19–12</td>
<td>Analytic</td>
<td>3</td>
<td>Analytic</td>
</tr>
<tr>
<td>19–13</td>
<td>Analytic</td>
<td>4</td>
<td>Analytic</td>
</tr>
<tr>
<td>19–14</td>
<td>Analytic</td>
<td>5</td>
<td>Analytic</td>
</tr>
</tbody>
</table>

**CPA/CMA**
### CPA/CMA AACSB Tags

<table>
<thead>
<tr>
<th>CPA/CMA</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
</tr>
<tr>
<td>7</td>
</tr>
<tr>
<td>8</td>
</tr>
<tr>
<td>9</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
</tbody>
</table>

### Problems

<table>
<thead>
<tr>
<th>Problem</th>
<th>AACSB Tags</th>
</tr>
</thead>
<tbody>
<tr>
<td>19–1</td>
<td>Analytic, Communications</td>
</tr>
<tr>
<td>19–2</td>
<td>Analytic</td>
</tr>
<tr>
<td>19–3</td>
<td>Analytic</td>
</tr>
<tr>
<td>19–4</td>
<td>Analytic</td>
</tr>
<tr>
<td>19–5</td>
<td>Analytic</td>
</tr>
<tr>
<td>19–6</td>
<td>Analytic</td>
</tr>
<tr>
<td>19–7</td>
<td>Analytic</td>
</tr>
<tr>
<td>19–8</td>
<td>Analytic</td>
</tr>
<tr>
<td>19–9</td>
<td>Analytic</td>
</tr>
<tr>
<td>19–10</td>
<td>Analytic, Communications</td>
</tr>
<tr>
<td>19–11</td>
<td>Analytic</td>
</tr>
<tr>
<td>19–12</td>
<td>Analytic</td>
</tr>
<tr>
<td>19–13</td>
<td>Analytic</td>
</tr>
<tr>
<td>19–14</td>
<td>Analytic</td>
</tr>
<tr>
<td>19–15</td>
<td>Analytic</td>
</tr>
<tr>
<td>19–16</td>
<td>Analytic</td>
</tr>
<tr>
<td>19–17</td>
<td>Analytic</td>
</tr>
<tr>
<td>19–18</td>
<td>Analytic</td>
</tr>
<tr>
<td>19–19</td>
<td>Analytic</td>
</tr>
<tr>
<td>19–20</td>
<td>Analytic</td>
</tr>
</tbody>
</table>
QUESTIONs FOR REVIEW OF KEY TOPICS

Question 19–1

Restricted stock refers to shares actually awarded in the name of an employee, although the employer might retain physical possession of the shares. Typically, the employee has all rights of a shareholder, but the shares are subject to certain restrictions or forfeiture. Usually the employee is not free to sell the shares during the restriction period. Restricted shares usually are subject to forfeiture by the employee if employment is terminated between the date of grant and a specified vesting date. Restrictions provide the employee incentive to remain with the company.

Compensation cost is the fair value of the restricted stock at the grant date and is equal to the market price of unrestricted shares of the same stock. The fair value of shares awarded under a restricted stock award plan is accrued to compensation expense over the service period for which participants receive the shares. This usually is the period from the date of grant to when restrictions are lifted (the vesting date).

Question 19–2

The fair value of a stock option is determined by employing a recognized option pricing model. The option pricing model should take into account the (1) exercise price of the option, (2) expected term of the option, (3) current market price of the stock, (4) expected dividends, (5) expected risk-free rate of return during the term of the option, and (6) expected volatility of the stock.

Question 19–3

The recipient pays no tax at the time of the grant or the exercise of the options under an incentive plan. Instead, the tax on the difference between the option price and the market price at the exercise date is paid on the date any shares acquired are subsequently sold. The employer gets no tax deduction at all.

The employee cannot delay paying tax under a nonqualified plan. The tax that could be deferred until the shares are sold under an incentive plan must be paid at the exercise date under a nonqualified plan. On the other hand, the employer is allowed to deduct the difference between the option price and the market price on the exercise date. Thus, a nonqualified plan offers favorable tax treatment to the employer, while an incentive plan offers favorable tax treatment to the employee.
Answers to Questions (continued)

Question 19–4
For performance-based options initial estimates of compensation cost as well as subsequent revisions of that estimate take into account the likelihood of both forfeitures and achieving performance targets. If it is probable that the performance target will be met, we recognize compensation over the vesting period at fair value. If achieving the target is not probable, no compensation is recorded. Probability is reassessed each period.

If the award contains a market condition (e.g., a share option with an exercisability requirement based on the stock price reaching a specified level), then no special accounting is required. The fair value estimate of the share option already implicitly reflects market conditions due to the nature of share option pricing models. Thus, we recognize compensation expense regardless of when, if ever, the market condition is met.

Question 19–5
A firm has a simple capital structure if it has no potential common shares outstanding. These are securities that are not yet common stock, but might become common stock if exercised or converted. Thus, they could potentially dilute (meaning reduce) earnings per share.

For a firm with a simple capital structure, EPS is simply earnings available to common shareholders divided by the weighted-average number of common shares outstanding.

Question 19–6
There is a fundamental difference between the increase in shares caused by stock dividends and stock splits and an increase from selling new shares. When additional shares are sold, both the assets of the firm and shareholders’ equity are increased by an additional investment by owners. On the other hand, stock dividends or stock splits merely increase the number of shares without affecting the firm’s assets. As a consequence, the same “pie” is divided into more pieces resulting in a larger number of less valuable shares. Shares outstanding prior to a stock dividend or stock split are retroactively restated to reflect the increase in shares, as if the distribution occurred at the beginning of the period. On the other hand, any new shares issued are “time-weighted” by the fraction of the period they were outstanding and then added to the number of shares outstanding for the entire period.
Answers to Questions (continued)

Question 19–7
The weighted-average number of shares for calculating EPS would be 104,500 determined as follows:

\[
\text{shares stock treasury}\text{ at Jan. 1 dividend shares adjustment}
\begin{align*}
100,000 & (1.05) \quad 1,200 \left(\frac{5}{12}\right) = 104,500 \text{ shares}
\end{align*}
\]

The 1,200 shares retired are weighted by \(\left(\frac{5}{12}\right)\) to reflect the fact they were not outstanding the last five months of the year. Purchases of shares that occur after a stock dividend or split are not affected by the distribution.

Question 19–8
Preferred dividends are deducted from the numerator in the EPS fraction so that “earnings available to common shareholders” will be divided by the weighted-average number of common shares. An exception would be when the preferred stock is noncumulative and no dividends were declared in the reporting period. Another time the deduction is not made is when the preferred stock is convertible and the calculation of EPS assumes the preferred stock has been converted and therefore no dividends are paid.

Question 19–9
Basic EPS does not reflect the dilutive effect of potential common shares. On the other hand, diluted EPS incorporates the dilutive effect of all potential common shares, if the effect is not antidilutive.

Question 19–10
When calculating diluted EPS, we assume that the shares specified by stock options, warrants, and rights are issued at the exercise price and that the hypothetical proceeds are used to buy back as treasury stock as many of those shares as could be acquired at the average market price.

Question 19–11
The potentially dilutive effect of convertible bonds is reflected in diluted EPS calculations by assuming the bonds were converted into common stock. The conversion is assumed to have occurred at the beginning of the period, or at the time the convertible bonds were issued, if later. When conversion is assumed, the additional common shares that would have been issued upon conversion are added to the denominator of the EPS fraction. The numerator is increased by the after-tax interest that would have been avoided if the bonds really had not been outstanding. This effect is reflected in diluted EPS calculations only if the effect is dilutive.
Answers to Questions (continued)

Question 19–12
The potentially dilutive effect of convertible preferred stock is reflected in diluted EPS calculations by assuming the preferred stock was converted into common stock, just as is done with convertible bonds. The conversion is assumed to have occurred at the beginning of the period, or at the time the convertible preferred stock was issued, if later.

When conversion is assumed, the additional common shares that would have been issued upon conversion are added to the denominator of the EPS fraction. Since EPS are calculated as if the preferred shares had been converted into common shares, there would be no dividends on the preferred stock; so, earnings available to common shareholders are not decreased by the dividends that otherwise would have been distributed to preferred shareholders. This is similar in concept to after-tax interest being added back to net income if the securities were convertible bonds because in each situation, if there are hypothetically no dividends or no interest to be paid, then net income would reflect earnings hypothetically available to only common shareholders. This effect is reflected in diluted EPS calculations only if the effect is dilutive.

Question 19–13
The order in which convertible securities are included in the dilutive EPS calculation is determined by comparing the incremental effect of their conversion. They should be included in numerical order, beginning with the lowest incremental effect (that is, the most dilutive).

Question 19–14
For the treasury stock method, “proceeds” include (1) the amount, if any, received from the hypothetical exercise of options or vesting of restricted stock, (2) the total compensation from the award that's not yet expensed, and (3) the difference between the eventual tax benefit and the amount recognized in expense.
Answers to Questions (continued)

Question 19–15
Contingently issuable shares are considered outstanding in the computation of diluted EPS when they will later be issued upon the mere passage of time or because of conditions that currently are met. If this year’s operating income was $2.2 million, the additional shares would be considered outstanding in the computation of diluted EPS by simply adding 50,000 additional shares to the denominator of the EPS fraction:

Contingently issuable shares:

no numerator adjustment

+ 50,000
additional shares

If conditions specified for issuance are not yet met, the additional shares are ignored in the calculation. This would be the case if this year’s operating income had been $2 million.

Question 19–16
The calculation of diluted EPS assumes convertible bonds had been converted at the beginning of the year (unless they actually were issued later). If they actually had been converted, the actual conversion would cause an actual increase in shares at the conversion date. These additional shares would be time-weighted for the remainder of the year. The numerator would be higher because net income actually would be increased by the after-tax interest saved on the bonds for that period. But the calculation also would assume conversion for the period before the actual conversion date because they were potentially dilutive during that period. The shares assumed outstanding would be time-weighted for the fraction of the year before the conversion, and the numerator would be increased by the after-tax interest assumed saved on the bonds for the same period.

Question 19–17
EPS data (both basic and diluted for a complex capital structure) must be reported on the face of the income statement for income from continuing operations and net income. Per share numbers for discontinued operations and extraordinary items also should be reported either on the face of the income statement or in related disclosure notes when these components of net income are present.

Question 19–18
Disclosure notes should include (a) a summary description of the rights and privileges of the company’s various securities and (b) supplemental EPS data for transactions that occur after the balance sheet date that result in a material change to the number of shares outstanding at the balance sheet date, and (c) a reconciliation of the numerator and denominator used in the basic EPS computations to the numerator and the denominator used in the diluted EPS computations.
Answers to Questions (concluded)

**Question 19–19**

The fair value of stock options has two essential components: (1) intrinsic value and (2) time value. “Intrinsic value” is the benefit the holder of an option would realize by exercising the option rather than buying the underlying stock directly. For example, an option that allows an employee to buy $13 stock for $8 has an intrinsic value of $5. “Time value” exists so long as time remains before expiration because the market price of the underlying stock may yet rise and create additional intrinsic value.

**Question 19–20**

The accounting treatment of SARs depends on whether the award is considered an equity instrument or a liability. If the employer can choose to settle in shares rather than cash, the award is considered to be equity. If the employee will receive cash or can choose to receive cash, the award is considered to be a liability. This is the case with the LTV plan. As a result, the amount of compensation and related liability is continually adjusted to reflect changes in the fair value of the SARs until the liability is finally settled. The expense each period is the percentage of the total liability earned to date by recipients of the SARs (based on the elapsed percentage of the service period), minus any amounts expensed in prior periods. Both compensation expense and the liability are adjusted each period until the SARs ultimately either are exercised or lapse.
**BRIEF EXERCISES**

**Brief Exercise 19–1**

\[ \text{\$6 \times 8 \text{ million} = \text{\$48 million}} \]

Fair value per share \( \times \) shares granted = fair value of award

The \$48 million total compensation is expensed equally over the three-year vesting period, reducing earnings by **\$16 million** each year.

**Brief Exercise 19–2**

\[ \text{\$5 \times 12 \text{ million} = \text{\$60 million}} \]

Fair value per option \( \times \) options granted = fair value of award

The \$60 million total compensation is expensed equally over the three-year vesting period, reducing earnings by **\$20 million** each year.

**Brief Exercise 19–3**

The company should adjust the cumulative amount of compensation expense recorded to date in the year the estimate changes.

2014

Compensation expense \( \left( [\$60 \times 95\% \times \frac{2}{3}] - 20 \right) \) \( \underline{18} \)

Paid-in capital—stock options \( \underline{18} \)

2015

Compensation expense \( \left( [\$60 \times 95\% \times \frac{3}{3}] - 20 - 18 \right) \) \( \underline{19} \)

Paid-in capital—stock options \( \underline{19} \)

Note that this approach is contrary to the usual way companies account for changes in estimates. For instance, assume a company acquires a three-year depreciable asset having no estimated residual value. The \$60 million depreciable cost would be depreciated straight line at \$20 million over the three-year useful life. If the estimated residual value changes after one year to 5% of cost, the new estimated depreciable cost of \$57 would be reduced by the \$20 million depreciation recorded the first year, and the remaining \$37 million would be depreciated equally, \$18.5 million per year, over the remaining two years.
Brief Exercise 19–4

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount ($ in millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash (17 exercise price x 12 million shares)</td>
<td>204</td>
</tr>
<tr>
<td>Paid-in capital—stock options (account balance)</td>
<td>60</td>
</tr>
<tr>
<td>Common stock (12 million shares at $1 par per share)</td>
<td>12</td>
</tr>
<tr>
<td>Paid-in capital—excess of par (remainder)</td>
<td>252</td>
</tr>
</tbody>
</table>

Note: The market price at exercise is irrelevant.

Brief Exercise 19–5

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount ($ in millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paid-in capital—stock options (account balance)</td>
<td>60</td>
</tr>
<tr>
<td>Paid-in capital—expiration of stock options</td>
<td>60</td>
</tr>
</tbody>
</table>

Brief Exercise 19–6

The estimate of the total compensation would be:

\[
100,000 \times $6 = $600,000
\]

One-third of that amount, or $200,000, will be recorded in each of the three years.

Brief Exercise 19–7

The new estimate of the total compensation would change to:

\[
0 \times $6 = $0
\]

In that case, Farmer would reverse the $200,000 expensed in 2013 because no compensation can be recognized for options that don’t vest due to performance targets not being met, and that’s the new expectation.
Brief Exercise 19–8

In that case, in 2014, the revised estimate of the total compensation would change to $600,000:

\[
100,000 \times 6 = 600,000
\]

Farmer would reflect the cumulative effect on compensation in 2014 earnings and record compensation thereafter:

2014

Compensation expense ([$600,000 \times 2/3] – 0) 400,000
Paid-in capital—stock options ................. 400,000

2015

Compensation expense ([$600,000 \times 3/3] – 400,000) 200,000
Paid-in capital—stock options ................. 200,000

Brief Exercise 19–9

If an award contains a market condition such as the stock price reaching a specified level, then no special accounting is required. The fair value estimate of the share option ($6) already implicitly reflects market conditions due to the nature of share option pricing models. So, Farmer recognizes compensation expense regardless of when, if ever, the market condition is met. The estimate of the total compensation would be:

\[
100,000 \times 6 = 600,000
\]

One-third of that amount, or $200,000, will be recorded in each of the three years.
**Brief Exercise 19–10**

(amounts in millions, except per share amount)

\[
\begin{align*}
\text{net} & \quad \text{income} \\
\$741 & \\

\frac{544 \text{ shares at Jan. 1}}{570 \text{ shares at Jan. 1}} & + \frac{36 \left(\frac{10}{12}\right)}{570} - \frac{6 \left(\frac{8}{12}\right)}{570} \times 570
\end{align*}
\]

\[
\text{Earnings Per Share} = \frac{\$741}{570} = \$1.30
\]

**Brief Exercise 19–11**

(amounts in millions, except per share amount)

\[
\begin{align*}
\text{net} & \quad \text{income} \\
\$426 & \\

\frac{820 \text{ common shares}}{820} & - \frac{16}{820} \times 820
\end{align*}
\]

\[
\text{Earnings Per Share} = \frac{\$410}{820} = \$0.50
\]

Since the preferred stock is cumulative, the dividends (8% x $200 million = $16 million) are deducted even though no dividends were declared. There are no potential common shares, so a single calculation of EPS is appropriate.
Brief Exercise 19–12

24,000 shares – 20,000 shares* = 4,000 shares

*Purchase of treasury shares

\[
\begin{align*}
24,000 \text{ shares} & \times \frac{50 \text{ (exercise price)}}{1,200,000} \\
& \div \frac{60 \text{ (average market price)}}{20,000 \text{ shares}} \\
& = 4,000 \text{ shares}
\end{align*}
\]

Brief Exercise 19–13

(amounts in thousands, except per share amounts)

<table>
<thead>
<tr>
<th>Basic EPS</th>
<th>net income</th>
<th>preferred dividends</th>
<th>$1,440</th>
<th>= $1.80</th>
</tr>
</thead>
<tbody>
<tr>
<td>800 shares at Jan. 1</td>
<td>$1,500</td>
<td>$60</td>
<td>800</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Diluted EPS</th>
<th>net income</th>
<th>$1,500</th>
<th>= $1.50</th>
</tr>
</thead>
<tbody>
<tr>
<td>800 shares at Jan. 1</td>
<td>$1,500</td>
<td>+ 200</td>
<td>1,000</td>
</tr>
</tbody>
</table>

- The preferred shares are considered converted when calculating diluted EPS. If converted, there would be no preferred dividends.
Brief Exercise 19–14

The total compensation for the award is $45 million ($5 market price per share x 9 million shares). Because the stock award vests over three years, it is expensed as $15 million each year for three years. At the end of 2013, the second year, $30 million has been expensed and $15 million remains unexpensed, so $15 million would be the assumed proceeds in an EPS calculation. If the market price averages $5, the $15 million will buy back 3 million shares and we would add to the denominator of diluted EPS 6 million common shares:

\[
\text{No adjustment to the numerator} \\
9 \text{ million } - 3 \times \text{ million} = \boxed{6 \text{ million}}
\]

\*Assumed purchase of treasury shares\*

\[
\frac{15 \text{ million}}{5 \text{ (average market price)}} = \frac{3 \text{ million shares}}{}
\]

Note: The proceeds also must be increased (or decreased) by any tax benefits that would be added to (or deducted from) paid-in capital when the eventual tax deduction differs from the amount expensed, the “excess tax benefit.” Since that occurs when the stock price at vesting differs from the stock price at the grant date, the fact that the market price remained at $5 avoided that issue.
EXERCISES

Exercise 19–1

Requirement 1

$5 \text{ fair value per share} \times 16 \text{ million shares granted} = $80 \text{ million fair value of award}

Requirement 2

<table>
<thead>
<tr>
<th>Date</th>
<th>($ in millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>December 31, 2013</td>
<td></td>
</tr>
<tr>
<td>Compensation expense ($80 million ÷ 2 years)</td>
<td>40</td>
</tr>
<tr>
<td>Paid-in capital—restricted stock</td>
<td>40</td>
</tr>
<tr>
<td>December 31, 2014</td>
<td></td>
</tr>
<tr>
<td>Compensation expense ($80 million ÷ 2 years)</td>
<td>40</td>
</tr>
<tr>
<td>Paid-in capital—restricted stock</td>
<td>40</td>
</tr>
<tr>
<td>Paid-in capital—restricted stock</td>
<td>80</td>
</tr>
<tr>
<td>Common stock (16 million shares x $1 par)</td>
<td>16</td>
</tr>
<tr>
<td>Paid-in capital—excess of par (remainder)</td>
<td>64</td>
</tr>
</tbody>
</table>
Exercise 19–2

Requirement 1

\[ \text{\$2.50 per share} \times 12 \text{ million shares} = \text{\$30 million fair value of award} \]

Requirement 2

no entry

Requirement 3

\begin{align*}
\text{(\$ in millions)} \\
\text{Compensation expense ($30 million ÷ 3 years)…} & \quad 10 \\
\text{Paid-in capital—restricted stock} & \quad 10
\end{align*}

Requirement 4

\begin{align*}
\text{Compensation expense ($30 million ÷ 3 years)…} & \quad 10 \\
\text{Paid-in capital—restricted stock} & \quad 10
\end{align*}

Requirement 5

\begin{align*}
\text{Compensation expense ($30 million ÷ 3 years)…} & \quad 10 \\
\text{Paid-in capital—restricted stock} & \quad 10
\end{align*}

Requirement 6

\begin{align*}
\text{Paid-in capital—restricted stock} & \quad 30 \\
\text{Common stock (12 million shares x \$1 par) } & \quad 12 \\
\text{Paid-in capital—excess of par (remainder)} & \quad 18
\end{align*}
Exercise 19–3

Requirement 1

$3,000,000 \div 111,540 \text{ shares} = \text{ }$26.90

Requirement 2

The $3,000,000 total compensation is expensed over the three-year vesting period, $1,000,000 each year. During the first year, the expense is the appropriate portion of $1,000,000, depending on the date the shares were issued. For instance, if the shares were issued three months before the end of the year, the expense would be $1,000,000 \times \frac{3}{12} = $250,000. The expense is the full $1,000,000 in the year following the year in which the stock was issued.
Exercise 19–4

Requirement 1

\[
\begin{array}{c}
\text{\$22.50 fair value per share} \\
x 4 \text{ million shares granted} \\
= \$90 \text{ million fair value of award}
\end{array}
\]

Requirement 2

no entry

Requirement 3

\[\text{(\$ in millions)}\]

Compensation expense \((\$90 \text{ million} ÷ 3 \text{ years})\)...
30
Paid-in capital—restricted stock ................. 30

Requirement 4

\[
\begin{array}{c}
\text{\$22.50 fair value per share} \\
x 4 \text{ million shares granted} \\
x \ 90\% 100\% - 10\% 	ext{ forfeiture rate} \\
= \$81 \text{ million fair value of award}
\end{array}
\]
Exercise 19–5

Requirement 1

\[
\begin{align*}
$3 & \quad \text{fair value per option} \\
\times 4 \text{ million} & \quad \text{options granted} \\
= $12 \text{ million} & \quad \text{total compensation}
\end{align*}
\]

Requirement 2

no entry

Requirement 3

($ in millions)

\[
\begin{align*}
\text{Compensation expense ($12 million ÷ 2 years)} & \quad 6 \\
\text{Paid-in capital—stock options} & \quad 6
\end{align*}
\]

Requirement 4

\[
\begin{align*}
\text{Compensation expense ($12 million ÷ 2 years)} & \quad 6 \\
\text{Paid-in capital—stock options} & \quad 6
\end{align*}
\]
**Exercise 19–6**

**Requirement 1**

At January 1, 2013, the estimated value of the award is:

\[
\begin{align*}
\text{\$3} & \quad \text{estimated fair value per option} \\
\times 25 \text{ million} & \quad \text{options granted} \\
= \$75 \text{ million} & \quad \text{total compensation}
\end{align*}
\]

**Requirement 2**

\[
\begin{align*}
\text{Compensation expense ($75 \text{ million} \div 3 \text{ years})} & \quad 25.0 \\
\text{Paid-in capital—stock options} & \quad 25.0
\end{align*}
\]

**Requirement 3**

Adams-Meneke should adjust the cumulative amount of compensation expense recorded to date in the year the estimate changes.

**2014**

\[
\begin{align*}
\text{Compensation expense ([$75 \times 94\% \times 2/3] – 25)} & \quad 22 \\
\text{Paid-in capital—stock options} & \quad 22
\end{align*}
\]

**2015**

\[
\begin{align*}
\text{Compensation expense ([$75 \times 94\% \times 3/3] – 25 – 22)} & \quad 23.5 \\
\text{Paid-in capital—stock options} & \quad 23.5
\end{align*}
\]

Note that this approach is contrary to the usual way companies account for changes in estimates. For instance, assume a company acquires a three-year depreciable asset having no estimated residual value. The $75 million depreciable cost would be depreciated straight line at $25 million over the three-year useful life. If the estimated residual value changes after one year to 6% of cost, the new estimated depreciable cost of $70.5 million would be reduced by the $25 million depreciation recorded the first year, and the remaining $45.5 million would be depreciated equally, $22.75 million per year, over the remaining two years.
Exercise 19–7

Requirement 1

At January 1, 2013, the estimated value of the award is:

\[
\begin{align*}
\text{estimated fair value per option} & = \$1 \\
\text{options granted} & = 40 \text{ million} \\
\text{fair value of award} & = \$40 \text{ million}
\end{align*}
\]

Requirement 2

\[
\begin{align*}
\text{Compensation expense (}$40 \text{ million} \div 2 \text{ years}$\text{)} & = 20 \\
\text{Paid-in capital—stock options} & = 20
\end{align*}
\]

Requirement 3

\[
\begin{align*}
\text{Compensation expense (}$40 \text{ million} \div 2 \text{ years}$\text{)} & = 20 \\
\text{Paid-in capital—stock options} & = 20
\end{align*}
\]

Requirement 4

\[
\begin{align*}
\text{Cash ($8 \text{ exercise price x 30 million shares}$)} & = 240 \\
\text{Paid-in capital—stock options} & = 240 \\
\text{Common stock (30 million shares at}$1 \text{ par per share)} & = 30 \\
\text{Paid-in capital—excess of par (remainder)} & = 240
\end{align*}
\]

Note: The market price at exercise is irrelevant.

Requirement 5

\[
\begin{align*}
\text{Paid-in capital—stock options ($40 – 30 \text{ million}$)} & = 10 \\
\text{Paid-in capital—expiration of stock options} & = 10
\end{align*}
\]
Exercise 19–8

Requirement 1

At January 1, 2013, the total compensation is measured as:

\[
\begin{align*}
&\text{Fair value per option} \\
&\text{Options granted} \\
&\text{Fair value of award}
\end{align*}
\]

\[
\begin{array}{ccc}
\$3 & \times 12 \text{ million} & = \$36 \text{ million} \\
\text{fair value per option} & \text{options granted} & \text{fair value of award}
\end{array}
\]

Requirement 2


($ in millions)

<table>
<thead>
<tr>
<th>Description</th>
<th>($ in millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compensation expense ($36 million ÷ 3 years)</td>
<td>12</td>
</tr>
<tr>
<td>Paid-in capital—stock options</td>
<td>12</td>
</tr>
</tbody>
</table>

Requirement 3

<table>
<thead>
<tr>
<th>Description</th>
<th>($ in millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash ($11 exercise price x 12 million shares)</td>
<td>132</td>
</tr>
<tr>
<td>Paid-in capital—stock options ($12 million x 3 years)</td>
<td>36</td>
</tr>
<tr>
<td>Common stock (12 million shares at $1 par per share)</td>
<td>12</td>
</tr>
<tr>
<td>Paid-in capital—excess of par (to balance)</td>
<td>156</td>
</tr>
</tbody>
</table>

Note: The market price at exercise is irrelevant.
Exercise 19–9

Cash ($12 x 50,000 x 85%) 510,000
Compensation expense ($12 x 50,000 x 15%) 90,000
   Common stock ($1 x 50,000) 50,000
   Paid-in capital—in excess of par ($11 x 50,000) 550,000

Exercise 19–10

(amounts in thousands, except per share amount)

\[
\text{net income} \begin{array}{c}
\begin{align*}
\text{Earnings} & = \frac{\text{Per Share}}{
900(1.05) + 60 \left( \frac{8}{12} \right) (1.05) + 72 \left( \frac{7}{12} \right) = 1,029}
\end{align*}
\end{array}
\]

\[\text{stock dividend} \uparrow \text{adjustment} \uparrow\]
Exercise 19–11

1. EPS in 2013

(amounts in thousands, except per share amount)

\[
\begin{array}{ccc}
\text{net income} & \text{Earnings Per Share} \\
\$400 & \$400 \quad = \quad \$2.00 \\
\hline
202 & 200 \\
\text{shares at Jan. 1} & \text{at Jan. 1} \\
-6 \left(\frac{10}{12}\right) & +6 \left(\frac{2}{12}\right) \\
\text{treasury shares sold} & \text{new shares} \\
+24 \left(\frac{1}{12}\right) & \\
\end{array}
\]

2. EPS in 2014

(amounts in thousands, except per share amount)

\[
\begin{array}{ccc}
\text{net income} & \text{Earnings Per Share} \\
\$400 & \$400 \quad = \quad \$0.88 \\
\hline
\left(202 - 6 + 6 + 24\right) & 452 \\
\text{shares at Jan. 1} & \text{stock split adjustment} \\
x \left(2.00\right) & \\
\end{array}
\]

3. 2013 EPS in the 2014 comparative financial statements

(amounts in thousands, except per share amount)

\[
\begin{array}{ccc}
\text{net income} & \text{Earnings Per Share} \\
\$400 & \$400 \quad = \quad \$1.00 \\
\hline
200 & 400 \\
\text{weighted-average shares as previously calculated} & \text{stock split adjustment} \\
x \left(2.00\right) & \\
\end{array}
\]
## Exercise 19–12

(amounts in thousands, except per share amount)

<table>
<thead>
<tr>
<th>net income</th>
<th>preferred dividends</th>
<th>Earnings Per Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>$2,000</td>
<td>− $50</td>
<td>$1,950</td>
</tr>
</tbody>
</table>

\[
\frac{2,000 - 50}{800 \times (1.25)} = \frac{1,950}{1,000} = $1.95
\]

shares at Jan. 1

stock dividend adjustment

## Exercise 19–13

(amounts in thousands, except per share amount)

<table>
<thead>
<tr>
<th>net loss</th>
<th>preferred dividends</th>
<th>Net Loss Per Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>− $114</td>
<td>− $76(^1)</td>
<td>− $190</td>
</tr>
</tbody>
</table>

\[
\frac{-114 - 76}{373 + 12 \left(\frac{7}{12}\right)} = \frac{-190}{380} = ($0.50)
\]

shares at Jan. 1

new shares

\(^1\)9.5\% \times $800^* = $76

\(^*\)8,000 shares \times$100 par = $800,000
Exercise 19–14

(amounts in millions, except per share amount)

\[
\begin{array}{ccc}
\text{net income} & \text{preferred dividends} & \text{Earnings Per Share} \\
\$150 & - \$27^* & \$123 \quad = \quad \frac{190}{190} = \$0.65 \\
\hline
200 \times (1.05) & 24 \times \left(\frac{10}{12}\right) \times (1.05) & + 4 \times \left(\frac{3}{12}\right) \\
\text{shares at Jan. 1} & \text{treasury shares} & \text{new shares} \\
\uparrow \text{stock dividend} \uparrow & \text{adjustment} \\
\end{array}
\]

*9% x $100 x 3 million shares = $27 million preferred dividends
## Exercise 19–15

( amounts in millions, except per share amount )

### Basic EPS

<table>
<thead>
<tr>
<th></th>
<th>net income</th>
<th>preferred dividends</th>
<th>=</th>
</tr>
</thead>
<tbody>
<tr>
<td>$150</td>
<td>$123</td>
<td>$27*</td>
<td></td>
</tr>
</tbody>
</table>

\[
\frac{200 \times (1.05) - 24 \times (10/12) \times (1.05) + 4 \times (3/12) + (30 - 24*)}{190} = 0.65
\]

*stock dividend adjustment*

\*9% x $100 x 3 million shares = $27 million preferred dividends

### Diluted EPS

<table>
<thead>
<tr>
<th></th>
<th>net income</th>
<th>preferred dividends</th>
<th>=</th>
</tr>
</thead>
<tbody>
<tr>
<td>$150</td>
<td>$123</td>
<td>$27</td>
<td></td>
</tr>
</tbody>
</table>

\[
\frac{200 \times (1.05) - 24 \times (10/12) \times (1.05) + 4 \times (3/12) + (30 - 24*)}{196} = 0.63
\]

*stock dividend adjustment*

**Purchase of treasury stock**

\[
30 \text{ million shares} \times \frac{\$56 \text{ (exercise price)}}{\$1,680 \text{ million}} = \frac{\$70 \text{ (average market price)}}{24 \text{ million shares}}
\]
# Exercise 19–16

(Amounts in millions, except per share amount)

## Basic EPS

<table>
<thead>
<tr>
<th></th>
<th>net income</th>
<th>preferred dividends</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic EPS</td>
<td>$150</td>
<td>$123</td>
</tr>
</tbody>
</table>

\[
\frac{200 \times (1.05) - 24 \times \left(\frac{10}{12}\right) \times (1.05) + 4 \times \left(\frac{3}{12}\right) + 30 \times \left(\frac{4}{12}\right)}{200} = \frac{123}{200} = 0.62
\]

\[
\uparrow \text{stock dividend} \uparrow
\]

\*9% x $100 x 3 million shares = $27 million preferred dividends

## Diluted EPS

<table>
<thead>
<tr>
<th></th>
<th>net income</th>
<th>preferred dividends</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diluted EPS</td>
<td>$150</td>
<td>$123</td>
</tr>
</tbody>
</table>

\[
\frac{200 \times (1.05) - 24 \times \left(\frac{10}{12}\right) \times (1.05) + 4 \times \left(\frac{3}{12}\right) + 30 \times \left(\frac{4}{12}\right)}{204} = \frac{123}{204} = 0.60
\]

\[
\uparrow \text{stock dividend} \uparrow
\]

\**Purchase of treasury stock**

\[
30 \text{ million shares} \times \$56 \text{ (exercise price)} = \$1,680 \text{ million} \\
\div \$70 \text{ (average market price)} = 24 \text{ million shares}
\]
Exercise 19–17

(amounts in millions, except per share amount)

**Basic EPS**

\[
\begin{align*}
\text{net income} & \quad \text{preferred dividends} \\
\$150 & \quad - \quad \$27^* \\
\hline
200 \ (1.05) & \quad - \quad 24 \ (^{10/12}_{12}) \ (1.05) & \quad + \quad 4 \ (^{3/12}_{12}) \\
\text{shares at Jan. 1} & \quad \text{treasury shares} & \quad \text{new shares} \\
\end{align*}
\]

\[\frac{190}{190} = \frac{\$123}{\$123} = \$0.65\]

\[\text{stock dividend} \quad \text{adjustment}\]

\[\text{stock dividend} \quad \text{adjustment}\]

*9% x $100 x 3 million shares = $27 million preferred dividends

**Diluted EPS**

\[
\begin{align*}
\text{net income} & \quad \text{preferred dividends} & \quad \text{after-tax interest savings} \\
\$150 & \quad - \quad \$27 & \quad + \quad \$5^* - 40\% \ (\$5^{**}) \\
\hline
200 \ (1.05) & \quad - \quad 24 \ (^{10/12}_{12}) \ (1.05) & \quad + \quad 4 \ (^{3/12}_{12}) + (30 - 24^{**}) & \quad + \quad 6 \\
\text{shares at Jan. 1} & \quad \text{treasury shares} & \quad \text{new shares} & \quad \text{assumed exercise of options} & \quad \text{conversion of bonds} \\
\end{align*}
\]

\[\frac{202}{202} = \frac{\$126}{\$126} = \$0.62\]

\[\text{stock dividend} \quad \text{adjustment}\]

\[\text{stock dividend} \quad \text{adjustment}\]

**8% x $62.5 million = $5 million interest

***Purchase of treasury stock***

\[30 \text{ million shares} \times \frac{\$56 \ (\text{exercise price})}{\$1,680 \text{ million}} = \frac{\$70 \ (\text{average market price})}{24 \text{ million shares}}\]
Exercise 19–18

(amounts in thousands, except per share amount)

**Basic EPS**

\[
\text{net income} \quad \begin{array}{c} \$720 \\ \hline 80 \quad + \quad 15 \left(\frac{4}{12}\right) \quad \text{at Jan. 1 shares} \\
\end{array}
\]

\[
\frac{\$720}{85} = \frac{\text{shares}}{\text{new shares}} = \$8.47
\]

**Diluted EPS**

\[
\text{net income} \quad \begin{array}{c} \$720 \\ \hline 80 \quad + \quad 15 \left(\frac{4}{12}\right) \quad + \quad (24 - 20^*) \quad \text{at Jan. 1 shares} \\
\end{array}
\]

\[
\frac{\$720}{89} = \frac{\text{shares}}{\text{new shares assumed exercise of options}} = \$8.09
\]

*Purchase of treasury shares*

\[
\begin{array}{ccc}
\text{shares} & \times \quad \$37.50 & \text{(exercise price)} \\
\text{24,000} & \div \quad \$45 & \text{(average market price)} \\
\text{\$900,000} & \div \quad 20,000 & \text{shares}
\end{array}
\]
Exercise 19–19

(amounts in thousands, except per share amounts)

Basic EPS

\[
\text{net income} \quad \text{preferred dividends} \\
\text{\$500} \quad - 60^* \\
\hline
\text{100 shares at Jan. 1}
\]

\[
\frac{\text{\$500}}{\text{100}} = \frac{- 60^*}{100} = \text{\$4.40}
\]

Diluted EPS

\[
\text{net income} \quad \text{preferred dividends} \quad \text{preferred dividends} \quad \text{after-tax interest savings} \\
\text{\$500} \quad - 60^* \quad + 60^* \quad + 100\%^* - 40\% \times (\text{\$100}) \\
\hline
\text{100 shares at Jan. 1} \quad + 32 \text{ conversion of preferred stock} \quad + 30 \text{ conversion of bonds} \\
\]

\[
\frac{\text{\$500}}{162} = \frac{- 60^* + 60^* + 100\%^* - 40\% \times (\text{\$100})}{162} = \text{\$3.46}
\]

* 12,000 shares x \$5
** $1,000,000 x 10%

Order of Entry:

Note that we included in our calculation, the convertible security with the lowest “incremental effect” ($60 \div 32 = \$1.87$) before the one with the higher effect ($60 \div 30 = \$2.00$).

After including the conversion of the preferred stock only, EPS is $\$500 \div 132 = \$3.79$. The $\$2.00$ incremental effect of the conversion of the bonds is less than that amount, so in this instance the order of entry was unimportant. But there are situations in which the incremental effect of the second convertible security is higher than the calculation prior to its inclusion. In those situations, including the second security is antidilutive. That’s why we should include securities in the calculation in reverse order, beginning with the lowest incremental effect (most dilutive).
## Exercise 19–20

(amounts in thousands, except per share amounts)

### Basic EPS

<table>
<thead>
<tr>
<th>net income</th>
<th>Earnings Per Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>$120</td>
<td>$120</td>
</tr>
</tbody>
</table>

\[
\frac{120}{800} = \frac{0.15}{800}
\]

800 shares at Jan. 1

### Diluted EPS

<table>
<thead>
<tr>
<th>net income</th>
<th>Earnings Per Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>$120</td>
<td>$120</td>
</tr>
</tbody>
</table>

\[
\frac{120}{800 + (54 - 18\ast)} = \frac{0.14}{836}
\]

800 shares at Jan. 1 assumed vested

### Proceeds:

\[
\begin{align*}
\$270,000 & \quad ($5 \text{ market price per share } \times 54,000 \text{ shares}) \\
\div 3 & \quad \text{years vesting period} \\
\$90,000 & \quad \text{compensation expense per year} \\
\times 2 & \\
\$180,000 & \quad \text{expensed in 2012 and 2013} \\
\$90,000 & \quad \text{unexpensed compensation at Dec. 31, 2013}
\end{align*}
\]

*Assumed purchase of treasury shares*

\[
\frac{90,000 \text{ proceeds}}{5 \text{ (average market price)}} = \frac{5}{18,000 \text{ shares}}
\]

Note: The proceeds also must be increased (or decreased) by any tax benefits that would be added to (or deducted from) paid-in capital when the eventual tax deduction differs from the amount expensed, the “excess tax benefit.” Since that occurs when the stock price at vesting differs from the stock price at the grant date, the fact that the market price remained at $5 avoided that issue.
Exercise 19–21

**Requirement 1**

\[
\begin{align*}
\text{\$5} & \quad \text{fair value per share} \\
\times 18 \text{ million} & \quad \text{shares granted} \\
= \text{\$90 million} & \quad \text{fair value of award}
\end{align*}
\]

The $90 million total compensation is expensed equally over the three-year vesting period, reducing earnings by **$30 million** each year.

**2012**

- Compensation expense ................................................................. 30
- Paid-in capital—restricted stock .................................................. 30

**2013**

- Compensation expense ................................................................. 30
- Paid-in capital—restricted stock .................................................. 30

**Requirement 2**

The total compensation for the award is $90 million ($5 market price per share x 18 million shares). Because the stock award vests over three years, it is expensed as $30 million each year for three years. At the end of 2013, the second year, $60 million has been expensed and $30 million remains unexpensed, so $30 million would be the assumed proceeds in an EPS calculation. If the market price averages $5, the $30 million will buy back 6 million shares and we would add to the denominator of diluted EPS 12 million common shares:

\[
\text{No adjustment to the numerator} \\
18 \text{ million} – 6*M \text{ million} = 12 \text{ million}
\]

*Assumed purchase of treasury shares

\[
\begin{align*}
\text{\$30 million} & \quad \text{\$5 (average market price)} \\
\div 6 \text{ million shares} & \quad 6 \text{ million shares}
\end{align*}
\]

Note: The proceeds also must be increased (or decreased) by any tax benefits that would be added to (or deducted from) paid-in capital when the eventual tax deduction differs from the amount expensed, the “excess tax benefit.” Since that occurs when the stock price at vesting differs from the stock price at the grant date, the fact that the market price remained at $5 avoided that issue.
Exercise 19–22

(amounts in millions, except per share amounts)

**Basic EPS**

\[
\frac{\text{net income}}{\text{shares at Jan. 1} + 4 \left( \frac{9}{12} \right) + \text{new shares}} = \frac{148}{35 + 4 \left( \frac{9}{12} \right) + 38} = \frac{148}{38} = $3.89
\]

**Diluted EPS**

\[
\frac{\text{net income}}{\text{shares at Jan. 1} + 4 \left( \frac{9}{12} \right) + \text{additional shares}} = \frac{148}{35 + 4 \left( \frac{9}{12} \right) + 39} = \frac{148}{39} = $3.79
\]

Because the conditions are met for issuing 1 million shares, those shares are assumed issued for diluted EPS. Conditions for the other 1 million shares are not yet met, so as they are ignored.
Exercise 19–23

(amounts in thousands, except per share amounts)

Basic EPS

\[
\text{net income} \quad \frac{2,000}{600 + 100 \left(\frac{9}{12}\right)} = \frac{2,000}{675} = 2.96
\]

Diluted EPS

\[
\text{net income} \quad \frac{2,000}{600 + 100 \left(\frac{9}{12}\right) + 4 \times 10 + 15} = \frac{2,000}{730} = 2.74
\]

* Because the conditions currently are met (i.e., market price exceeds $48) for issuing 10,000 shares in each of the next four years, those shares are assumed issued for diluted EPS.

** The condition for the other 15,000 shares also is met (the controller is employed), so those shares are assumed issued for diluted EPS.
Exercise 19–24

<table>
<thead>
<tr>
<th>List A</th>
<th>List B</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>e</strong> 1. Subtract preferred dividends.</td>
<td>a. Options exercised.</td>
</tr>
<tr>
<td><strong>m</strong> 2. Time-weighted by $\frac{5}{12}$.</td>
<td>b. Simple capital structure.</td>
</tr>
<tr>
<td><strong>a</strong> 3. Time-weighted shares assumed issued plus time-weighted actual shares.</td>
<td>c. Basic EPS.</td>
</tr>
<tr>
<td><strong>i</strong> 4. Midyear event treated as if it occurred at the beginning of the reporting period.</td>
<td>d. Convertible preferred stock.</td>
</tr>
<tr>
<td><strong>l</strong> 5. Preferred dividends do not reduce earnings.</td>
<td>e. Earnings available to common shareholders.</td>
</tr>
<tr>
<td><strong>g</strong> 7. Stock split.</td>
<td>g. Increased marketability.</td>
</tr>
<tr>
<td><strong>d</strong> 8. Potential common shares.</td>
<td>h. Extraordinary items.</td>
</tr>
<tr>
<td><strong>f</strong> 9. Exercise price exceeds market price.</td>
<td>i. Stock dividend.</td>
</tr>
<tr>
<td><strong>c</strong> 10. No dilution assumed.</td>
<td>j. Add after-tax interest to numerator.</td>
</tr>
<tr>
<td><strong>j</strong> 11. Convertible bonds.</td>
<td>k. Diluted EPS.</td>
</tr>
<tr>
<td><strong>k</strong> 13. Maximum potential dilution.</td>
<td>m. Common shares retired at the beginning of August.</td>
</tr>
<tr>
<td><strong>h</strong> 14. Shown between per share amounts for net income and for income from continuing operations.</td>
<td>n. Include in diluted EPS when conditions for issuance are met.</td>
</tr>
</tbody>
</table>

© The McGraw-Hill Companies, Inc., 2013
Intermediate Accounting, 7e
Exercise 19–25

Requirement 1

The *FASB Accounting Standards Codification* represents the single source of authoritative U.S. generally accepted accounting principles. The appropriate accounting treatment for the situation is specified in FASB ASC 718–10–50: “Compensation–Stock Compensation–Overall–Disclosure.”

Requirement 2

Section 718–10–50–2c states that companies must disclose:

For the most recent year for which an income statement is provided, both of the following:

1. The number and weighted-average exercise prices (or conversion ratios) for each of the following groups of share options:
   1. Those outstanding at the beginning of the year
   2. Those outstanding at the end of the year
   3. Those exercisable or convertible at the end of the year
   4. Those that during the year were:
      1. Granted
      2. Exercised or converted
      3. Forfeited
      4. Expired
Exercise 19–26

The FASB Accounting Standards Codification represents the single source of authoritative U.S. generally accepted accounting principles. The specific citation for each of the following items is:

1. **Stock options:**

2. **The measurement date for share-based payments classified as liabilities:**

3. **The formula to calculate diluted earnings per share.**

4. **The way stock dividends or stock splits in the current year affect the presentation of EPS on the income statement.**
Exercise 19–27

Requirement 1
The SARs are considered to be equity because IE will settle in shares of IE stock at exercise

January 1, 2013
No entry

Calculate total compensation expense:

\[ \text{Estimated fair value per SAR} \times \text{SARs granted} = \text{Total compensation} \]

\[ $3 \times 24 \text{ million} = $72 \text{ million} \]

The total compensation is allocated to expense over the four-year service (vesting) period: 2013 – 2016

\[ \frac{$72 \text{ million}}{4 \text{ years}} = $18 \text{ million per year} \]

Requirement 2


Compensation expense ($72 million ÷ 4 years) 18
Paid-in capital—SAR plan 18

Requirement 3
The total compensation is measured once—at the grant date—and is not remeasured subsequently.

Requirement 4

June 6, 2018
Paid-in capital—SAR plan (account balance) 72
Common stock ($1 par per share x [$96 million ÷ $50]) 1.92
Paid-in capital—in excess of par (to balance) 70.08

\[ *$50 - 46 = $4 \text{ appreciation per share times 24 million units} = $96 \text{ million} \]
Exercise 19–28

Requirement 1
The SARs are considered to be a liability because employees can elect to receive cash at exercise.

January 1, 2013
No entry

Requirement 2
December 31, 2013
Compensation expense ($4 x 24 million x 1/4) 24
   Liability—SAR plan 24

December 31, 2014
Compensation expense ([$3 x 24 million x 2/4] – 24) 12
   Liability—SAR plan 12

December 31, 2015
   Liability—SAR plan 36

December 31, 2016
Liability—SAR plan 12
   Compensation expense ([$2.50 x 24 million x 4/4] – 24 – 12 – 36) 12

Requirement 3
December 31, 2017
Compensation expense ([$3 x 24 million x all] – 24 – 12 – 36 + 12) 12
   Liability—SAR plan 12

Requirement 4
June 6, 2018
Compensation expense ([($50 – 46) x 24 million x all] – 24 – 12 – 36 + 12 – 12) 24
   Liability—SAR plan 24

   Liability—SAR plan (account balance) 96
   Cash 96
1. **c.** The FASB requires companies with a history of forfeitures to use that history in estimating the compensation expense allocated over the service period. Therefore, Pall Corp. should record compensation expense of $192,000 for 2013. The total compensation is $400,000 (40,000 options x estimated fair value of $10 each) times 96% = $384,000 divided by two-year service period = $192,000 per year.

2. **b.** The total compensation is $24,000, the option model price of $8 each times the number of options, 3,000. Since the service period is two years, the compensation expense for 2013 is $12,000 ($24,000 ÷ 2 years).

3. **b.** The key point is that the stock split is retroactive to the beginning of the year.

   \[20,000 \times 2.0 + 10,000 \times \frac{6}{12} = 45,000\]

4. **b.**

   \[
   \frac{1,000,000 - 50,000}{100,000} = \$9.50 \text{ EPS}
   \]

   Even though no dividends were declared, the preferred dividends are subtracted from the numerator since the preferred shares are cumulative.

5. **b.** Proceeds from exercise of options = 9,000 shs. × $7 = $63,000

   Used to repurchase common stock at average market price = $63,000 ÷ $9 = 7,000 shs.

   Number of shares if options exercised 9,000
   Less: Shares assumed repurchased (7,000)
   Dilution (Potential Common Shares) 2,000

   Shares for diluted EPS = 50,000 + 2,000 = 52,000
**CPA Exam Questions (concluded)**

6. c. The “if converted method” assumes that the preferred stock was converted to common stock and that preferred dividends were not distributed. Therefore, the numerator in the computation of diluted EPS would be the net income of $900,000.

7. b. Diluted EPS = \( \frac{\text{\$1,000 NI} + \text{\$200 after-tax interest}}{1,000 \text{ shs. common} + 1,000 \text{ potential common shares}} \)

   \[
   = \frac{\$1,200}{2,000}
   = \$0.60
   \]

   \(*($10,000 \times 4\%) \times (1 - .50) = \$200\)

8. b. Under U.S. GAAP, for stock options, a deferred tax asset (DTA) is created for the cumulative amount of the fair value of the options the company has recorded for compensation expense. The DTA is the tax rate times the amount of compensation. Under IFRS, the deferred tax asset isn’t created until the award is “in the money;” that is, it has intrinsic value. When it is in the money, the addition to the DTA is the portion of the intrinsic value earned to date times the tax rate.

9. c.

<table>
<thead>
<tr>
<th>Vesting Date</th>
<th>Amount Vesting (in 000s)</th>
<th>Fair Value per Option</th>
<th>Compensation Cost ($ in 000s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dec. 31, 2013</td>
<td>16</td>
<td>$5</td>
<td>$80</td>
</tr>
<tr>
<td>Dec. 31, 2014</td>
<td>24</td>
<td>$6</td>
<td>144</td>
</tr>
<tr>
<td>Dec. 31, 2015</td>
<td>40</td>
<td>$9</td>
<td>360</td>
</tr>
</tbody>
</table>

The compensation cost is allocated on a straight-line basis over the appropriate vesting (service) period:

<table>
<thead>
<tr>
<th>Shares Vesting at:</th>
<th>Compensation Cost Recognized in: ($ in 000s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dec. 31, 2013</td>
<td>2013: $80, 2014: $72, 2015: $120 (\equiv $584)</td>
</tr>
<tr>
<td>Dec. 31, 2014</td>
<td>2013: $72, 2014: $72, 2015: $120 (\equiv $584)</td>
</tr>
<tr>
<td>Dec. 31, 2015</td>
<td>2013: 120, 2014: 120, 2015: $120 (\equiv $584)</td>
</tr>
</tbody>
</table>
CMA Exam Questions

1. **d.** A noncompensatory plan is defined as one in which substantially all full-time employees participate, the stock available to each employee is equal or is based on salary, the option exercise period is reasonable, and the discount from market is not greater than reasonable in an offer to shareholders or others. Noncompensatory plans do not provide for the achievement of certain performance criteria.

2. **b.** A compensatory stock option plan involves the issuance of stock in whole or in part for employee services. The compensation cost should be recognized as an expense of one or more periods in which the employee performed services.
PROBLEMS

Problem 19–1

Requirement 1

The measurement date is always the date of grant, January 1, 2013.

Requirement 2

\[ \frac{6 \times 20\text{ million}}{120\text{ million}} = \$120\text{ million} \quad \text{fair value of award} \]

The total compensation is to be allocated to expense over the three-year service (vesting) period: 2013–2015

\[ \frac{120\text{ million}}{3\text{ years}} = \$40\text{ million per year} \]

Requirement 3

Ensor should adjust the cumulative amount of compensation expense recorded to date in the year the estimate changes.

\begin{align*}
2014 & \\
\text{Compensation expense} & = \$120 \times 90\% \times 2/3 - 40 \quad 32 \\
\text{Paid-in capital—stock options} & 32 \\
2015 & \\
\text{Compensation expense} & = \$120 \times 90\% \times 3/3 - 40 - 32 \quad 36 \\
\text{Paid-in capital—stock options} & 36
\end{align*}
Problem 19–1 (concluded)

Requirement 4

This approach is contrary to the usual way companies account for changes in estimates. For instance, assume a company acquires a three-year depreciable asset having no estimated residual value for $120 million. The $120 million depreciable cost would be depreciated straight line at $40 million over the three-year useful life. If the estimated residual value changes after one year to 10% of cost, the new estimated depreciable cost of $108 million would be reduced by the $40 million depreciation recorded the first year, and the remaining $68 million would be depreciated equally, $34 million per year, over the remaining two years.

Requirement 5

($ in millions)

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash ((15 \times 80% = 12) exercise price (\times 18) million shares)</td>
<td>216</td>
</tr>
<tr>
<td>Paid-in capital—stock options (account balance of $108 million)</td>
<td>108</td>
</tr>
<tr>
<td>Common stock (2 million shares at $1 par per share)</td>
<td>18</td>
</tr>
<tr>
<td>Paid-in capital—excess of par (remainder)</td>
<td>306</td>
</tr>
</tbody>
</table>

Note: The market price at exercise is irrelevant.
Problem 19–2

Requirement 1

We treat each individual vesting date as a separate award:

<table>
<thead>
<tr>
<th>Vesting Date</th>
<th>Number Vesting</th>
<th>Fair Value per Option</th>
<th>Compensation Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dec. 31, 2013</td>
<td>100,000</td>
<td>$3.50</td>
<td>$350,000</td>
</tr>
<tr>
<td>Dec. 31, 2014</td>
<td>100,000</td>
<td>$4.00</td>
<td>400,000</td>
</tr>
<tr>
<td>Dec. 31, 2015</td>
<td>100,000</td>
<td>$4.50</td>
<td>450,000</td>
</tr>
<tr>
<td>Dec. 31, 2016</td>
<td>100,000</td>
<td>$5.00</td>
<td>500,000</td>
</tr>
</tbody>
</table>

$1,700,000

The compensation cost is allocated on a straight-line basis over the appropriate vesting (service) period:

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Dec. 31, 2013</td>
<td>$350,000</td>
</tr>
<tr>
<td>Dec. 31, 2014</td>
<td>200,000 $200,000</td>
</tr>
<tr>
<td>Dec. 31, 2015</td>
<td>150,000 150,000 $150,000</td>
</tr>
<tr>
<td>Dec. 31, 2016</td>
<td>125,000 125,000 125,000 $125,000</td>
</tr>
<tr>
<td>$825,000 $475,000 $275,000 $125,000</td>
<td></td>
</tr>
</tbody>
</table>

= $1,700,000

Also, a company must have recognized at least the amount vested by that date. The allocation here meets that constraint:

- The $825,000 recognized in 2013 exceeds the $350,000 vested.
- The $1,300,000 ($825,000 + 475,000) recognized by 2014 exceeds the $750,000 ($350,000 + 400,000) vested by the same time.
- The $1,575,000 ($825,000 + 475,000 + 275,000) recognized by 2015 exceeds the $1,200,000 ($350,000 + 400,000 + 450,000) vested by the same time.
Problem 19–2 (concluded)

Requirement 2

Companies are allowed to use the straight-line method. The $1,700,000 total compensation cost is allocated equally to 2013, 2014, 2015, and 2016 at $425,000 per year. Also, a company must have recognized at least the amount vested by that date. The straight-line allocation meets that constraint:

- The $425,000 recognized in 2013 exceeds the $350,000 vested.
- The $850,000 ($425,000 + 425,000) recognized by 2014 exceeds the $750,000 ($350,000 + 400,000) vested by the same time.
- The $1,275,000 ($425,000 + 425,000 + 425,000) recognized by 2015 exceeds the $1,200,000 ($350,000 + 400,000 + 450,000) vested by the same time.
Problem 19–3
Requirement 1

We treat each individual vesting date as a separate award:

<table>
<thead>
<tr>
<th>Vesting Date</th>
<th>Number Vesting</th>
<th>Fair Value per Option</th>
<th>Compensation Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dec. 31, 2013</td>
<td>100,000</td>
<td>$4.50</td>
<td>$450,000</td>
</tr>
<tr>
<td>Dec. 31, 2014</td>
<td>100,000</td>
<td>$4.50</td>
<td>450,000</td>
</tr>
<tr>
<td>Dec. 31, 2015</td>
<td>100,000</td>
<td>$4.50</td>
<td>450,000</td>
</tr>
<tr>
<td>Dec. 31, 2016</td>
<td>100,000</td>
<td>$4.50</td>
<td>$450,000</td>
</tr>
</tbody>
</table>

The compensation cost is allocated on a straight-line basis over the appropriate vesting (service) period:

<table>
<thead>
<tr>
<th>Shares Vesting at:</th>
<th>Compensation Expense Recorded in:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2013 2014 2015 2016</td>
</tr>
<tr>
<td>Dec. 31, 2013</td>
<td>$450,000</td>
</tr>
<tr>
<td>Dec. 31, 2014</td>
<td>225,000 225,000</td>
</tr>
<tr>
<td>Dec. 31, 2015</td>
<td>150,000 150,000 150,000</td>
</tr>
<tr>
<td>Dec. 31, 2016</td>
<td>112,500 112,500 112,500 112,500</td>
</tr>
<tr>
<td></td>
<td>$937,500 $487,500 $262,500 $112,500</td>
</tr>
</tbody>
</table>

= $1,800,000

Also, a company must have recognized at least the amount vested by that date. The allocation here meets that constraint:

- The $937,500 recognized in 2013 exceeds the $450,000 vested.
- The $1,425,000 ($937,500 + 487,500) recognized by 2014 exceeds the $900,000 ($450,000 + 450,000) vested by the same time.
- The $1,687,500 ($937,500 + 487,500 + 262,500) recognized by 2015 exceeds the $1,350,000 ($450,000 + 450,000 + 450,000) vested by the same time.
Problem 19–3 (concluded)

Requirement 2

Companies are allowed to use the straight-line method. The $1,800,000 total compensation cost is allocated equally to 2013, 2014, 2015, and 2016 at $450,000 per year. Notice that this approach is essentially the same as we use for options that vest all at one time at the end of the vesting period (cliff-vesting). Also, a company must have recognized at least the amount vested by that date. The straight-line allocation meets that constraint:

- The $450,000 recognized in 2013 equals the $450,000 vested.

- The $900,000 ($450,000 + 450,000) recognized by 2014 equals the $900,000 ($450,000 + 450,000) vested by the same time.

- The $1,350,000 ($450,000 + 450,000 + 450,000) recognized by 2015 equals the $1,350,000 ($450,000 + 450,000 + 450,000) vested by the same time.
Problem 19–4
Requirement 1

Using IFRS, the basic accounting would be the same as under U.S. GAAP, except there is no specific requirement that a company must have recognized at least the amount vested by that date. We treat each individual vesting date as a separate award:

<table>
<thead>
<tr>
<th>Vesting Date</th>
<th>Number Vesting</th>
<th>Fair Value per Option</th>
<th>Compensation Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dec. 31, 2013</td>
<td>100,000</td>
<td>$3.50</td>
<td>$350,000</td>
</tr>
<tr>
<td>Dec. 31, 2014</td>
<td>100,000</td>
<td>$4.00</td>
<td>400,000</td>
</tr>
<tr>
<td>Dec. 31, 2015</td>
<td>100,000</td>
<td>$4.50</td>
<td>450,000</td>
</tr>
<tr>
<td>Dec. 31, 2016</td>
<td>100,000</td>
<td>$5.00</td>
<td>500,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>$1,700,000</td>
</tr>
</tbody>
</table>

The compensation cost is allocated on a straight-line basis over the appropriate vesting (service) period:

<table>
<thead>
<tr>
<th>Shares Vesting at:</th>
<th>Compensation Expense Recorded in:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2013</td>
</tr>
<tr>
<td>Dec. 31, 2013</td>
<td>$350,000</td>
</tr>
<tr>
<td>Dec. 31, 2014</td>
<td>200,000</td>
</tr>
<tr>
<td>Dec. 31, 2015</td>
<td>150,000</td>
</tr>
<tr>
<td>Dec. 31, 2016</td>
<td>125,000</td>
</tr>
<tr>
<td></td>
<td>$825,000</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Requirement 2

Under IFRS companies are not permitted to use the straight-line method.
Problem 19–5

Requirement 1
$7.48 \times 10 \text{ million shares} = $74.8 \text{ million}
\frac{\div 3 \text{ years}}{} = $24.93 \text{ million per year}

The compensation expense is $24.93 million each full year, which was 2006 and 2007. Because the stock award was issued during 2005, an appropriate portion of that amount was recorded in 2005 and 2006.

Requirement 2
$296 \text{ million} \div $646.6 \text{ million} = 46\%, \text{ or}
4.6 \text{ million shares} \div 10 \text{ million shares} = 46\%

Requirement 3

| September 25, 2005 |  \begin{align*} 
\text{Compensation expense (from requirement 1)} & \quad \quad 24.93 \\
\text{Paid-in capital—restricted stock*} & \quad \quad 24.93 \\
\text{Deferred tax asset ($24.93 \times 46\%)} & \quad \quad 11.47 \\
\text{Income tax expense} & \quad \quad 11.47
\end{align*} |

Requirement 4

| March 16, 2006 |  \begin{align*} 
\text{Paid-in capital—restricted stock* ($24.93 \times 3 \text{ yrs})} & \quad \quad 74.80 \\
\text{Common stock} & \quad \quad 74.80 \\
\text{Income tax payable (given)} & \quad \quad 296.00 \\
\text{Deferred tax asset ($11.47 \times 3 \text{ yrs})} & \quad \quad 34.41 \\
\text{Paid-in capital—tax effect of restricted stock*} & \quad \quad 261.59 \\
\text{Common stock} & \quad \quad 296.00 \\
\text{Income tax and employment tax payable} & \quad \quad 296.00
\end{align*} |

* In its financial statements, Apple combines all of its paid-in capital accounts under a single title—common stock.
Problem 19–6

Requirement 1

At January 1, 2013, the estimated value of the award is:

\[
\begin{align*}
\text{\$2 estimated fair value per option} & \times 40 \text{ million options granted} \\
\text{\$80 million total compensation} & \\
\end{align*}
\]

Requirement 2

\[
\begin{align*}
\text{Compensation expense (\$80 million ÷ 2 years)...} & \quad 40 \\
\text{Paid-in capital—stock options} & \quad 40 \\
\text{Deferred tax asset (\$40 million x 40\%)...} & \quad 16 \\
\text{Tax expense} & \quad 16 \\
\end{align*}
\]

Note: Since the plan does not qualify as an incentive plan, Walters will deduct the difference between the exercise price and the market price at the exercise date. Recall from Chapter 16 that this creates a temporary difference between accounting income (for which compensation expense is recorded currently) and taxable income (for which the tax deduction is taken later upon the exercise of the options). Under FASB 123(r), we assume the temporary difference is the cumulative amount expensed for the options, \$40 million at this point. So, the deferred tax benefit is 40\% x \$40 million.

Requirement 3

\[
\begin{align*}
\text{Compensation expense (\$80 million ÷ 2 years)...} & \quad 40 \\
\text{Paid-in capital—stock options} & \quad 40 \\
\text{Deferred tax asset (\$40 million x 40\%)...} & \quad 16 \\
\text{Tax expense} & \quad 16 \\
\end{align*}
\]
Problem 19–6 (concluded)

Requirement 4

($ in millions)

Cash ($8 exercise price x 40 million shares) .................. 320
Paid-in capital—stock options (account balance) ........... 80
Common stock (40 million shares at $1 par per share) ..... 40
Paid-in capital—excess of par (to balance) ................. 360

Income taxes payable ([$12 – 8] x 40 million shares x 40%) 64
Deferred tax asset (2 years x $16 million) .................. 32
Paid-in capital—tax effect of stock options (remainder) 32

Requirement 5

Compensation expense ($80 million ÷ 2 years) .......... 40
Paid-in capital—stock options ................................ 40

No deferred tax asset is recorded because an incentive plan does not provide the employer a tax deduction.

Requirement 6

Cash ($8 exercise price x 40 million shares) .................. 320
Paid-in capital—stock options (account balance) ........ 80
Common stock (40 million shares at $1 par per share) ... 40
Paid-in capital—excess of par (to balance) ............... 360

No tax effect because an incentive plan does not provide the employer a tax deduction.
Problem 19–7

Requirement 1

At January 1, 2013, the total compensation is measured as:

\[
\begin{align*}
\$6 & \quad \text{fair value per option} \\
\times 6 \text{ million options granted} & \quad \text{options granted} \\
= \$36 \text{ million} & \quad \text{fair value of award}
\end{align*}
\]

Requirement 2


\[
\begin{align*}
\text{(in millions)} & \\
\text{Compensation expense} (\$36 \text{ million} \div 3 \text{ years}) & \quad 12.0 \\
\text{Paid-in capital—stock options} & \quad 12.0 \\
\text{Deferred tax asset} (\$12 \text{ million} \times 40\%) & \quad 4.8 \\
\text{Tax expense} & \quad 4.8
\end{align*}
\]

**Note:** Since the plan does not qualify as an incentive plan, JBL will deduct the difference between the exercise price and the market price at the exercise date. Recall from Chapter 16 that this creates a temporary difference between accounting income (for which compensation expense is recorded currently) and taxable income (for which the tax deduction is taken later upon the exercise of the options). Under GAAP, we assume the temporary difference is the cumulative amount expensed for the options, $12 million, $24 million, and $36 million at Dec. 31, 2013, 2014, and 2015, respectively. So, the deferred tax benefit is 40% of that amount each year.

Requirement 3

August 21, 2017

\[
\begin{align*}
\text{(in millions)} & \\
\text{Cash} (\$22 \text{ exercise price} \times 6 \text{ million shares}) & \quad 132.0 \\
\text{Paid-in capital—stock options (account balance)} & \quad 36.0 \\
\text{Common stock} (6 \text{ million shares at $1 par per share}) & \quad 6.0 \\
\text{Paid-in capital—excess of par (to balance)} & \quad 162.0 \\
\text{Income taxes payable} ([\$27 – 22] \times 6 \text{ million shares} \times 40\%) & \quad 12.0 \\
\text{Paid-in capital—tax effect of stock options (remainder)} & \quad 2.4 \\
\text{Deferred tax asset} (3 \text{ years} \times \$4.8 \text{ million}) & \quad 14.4
\end{align*}
\]
Problem 19–8

Requirement 1

No entry until the end of the reporting period, but compensation must be estimated at the grant date:

\[
1 \text{ million} \times \frac{12}{1} = 12 \text{ million}
\]

<table>
<thead>
<tr>
<th>options</th>
<th>fair expected</th>
<th>value to vest</th>
<th>total compensation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 million</td>
<td>$12</td>
<td>$12 million</td>
<td></td>
</tr>
</tbody>
</table>

Requirement 2

\[\text{December 31, 2013, 2014, 2015, 2016} \quad ($ \text{ in millions})\]

Compensation expense ($12 million x ¼)...... 3
Paid-in capital—stock options..................... 3

Requirement 3

If, after two years, LCI estimates that it is not probable that the performance goals will be met, then the new estimate of the total compensation would change to:

\[
0 \times \frac{12}{1} = 0
\]

In that case, LCI would reverse the $6 million expensed in 2013–2014 because no compensation can be recognized for options that don’t vest due to performance targets not being met, and that’s the new expectation.

\[\text{December 31, 2015} \quad ($ \text{ in millions})\]

| Paid-in capital—stock options | 6 |
| Compensation expense           | 6 |

\[\text{December 31, 2016} \quad \text{No entry}\]
### Problem 19–9

1. **Net loss per share for the year ended December 31, 2013:**

   (amounts in millions, except per share amount)

   \[
   \begin{array}{ccc}
   \text{net} & \text{preferred} & \text{Net Loss} \\
   \text{loss} & \text{dividends} & \text{Per Share} \\
   - $140 & - $160^1 & - $300 \\
   \hline
   600 (1.05) & - 30 (8/12) (1.05) & 613 \\
   \text{shares at Jan. 1} & \text{treasury} & \text{new} \\
   & \text{shares} & \text{shares} \\
   \uparrow \text{stock dividend} \uparrow & & \\
   \rightarrow \text{adjustment} & & \\
   \end{array}
   \]

   \( \frac{- $140}{600 (1.05)} - \frac{- $160^1}{- 30 (8/12) (1.05)} + \frac{12 (4/12)}{613} = \frac{- $300}{- ($0.49)} \)

2. **Per share amount of income or loss from continuing operations for the year ended December 31, 2013:**

   (amounts in millions, except per share amount)

   \[
   \begin{array}{ccc}
   \text{operating} & \text{preferred} & \text{Income from} \\
   \text{income} & \text{dividends} & \text{Continuing} \\
   $260^2 & - $160^1 & \text{Operations} \\
   \hline
   600 (1.05) & - 30 (8/12) (1.05) & 613 \\
   \text{shares at Jan. 1} & \text{treasury} & \text{new} \\
   & \text{shares} & \text{shares} \\
   \uparrow \text{stock dividend} \uparrow & & \\
   \rightarrow \text{adjustment} & & \\
   \end{array}
   \]

   \( \frac{$260^2}{600 (1.05)} - \frac{- $160^1}{- 30 (8/12) (1.05)} + \frac{12 (4/12)}{613} = \frac{$100}{- ($0.16)} \)

1. 20 million shares x $100 x 8% = $160 million
2. $400 – $140 = $260 million
**Problem 19–9 (concluded)**

3. **2013 and 2012 comparative income statements:**

   (amounts in millions, except per share amount)

<table>
<thead>
<tr>
<th>Earnings (Loss) Per Common Share:</th>
<th>2013</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income (loss) from operations before extraordinary items</td>
<td>$.16</td>
<td>$.71</td>
</tr>
<tr>
<td>Extraordinary loss from litigation settlement</td>
<td>(.65)</td>
<td>—</td>
</tr>
<tr>
<td>Net income (loss)</td>
<td>($.49)</td>
<td>$.71</td>
</tr>
</tbody>
</table>

*Note:* The weighted-average number of common shares in 2012 should be adjusted for the stock dividend in 2013 for the purpose of reporting 2012 EPS in subsequent years for comparative purposes:

\[
\frac{\text{net income}}{\text{shares at Jan. 1}} = \frac{\text{Earnings Per Share}}{\text{stock dividend adjustment}}
\]

\[
\frac{450}{600} = \frac{450}{(1.05) \times 630} = $.71
\]

© The McGraw-Hill Companies, Inc., 2013

*Solutions Manual, Vol.2, Chapter 19*
### Problem 19–10

#### 2011

<table>
<thead>
<tr>
<th>Net Loss Per Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \frac{-$160,500}{1,855,000 \text{ shares}} ) = ($0.09)</td>
</tr>
</tbody>
</table>

#### 2012

<table>
<thead>
<tr>
<th>Earnings Per Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \frac{$2,240,900}{1,855,000 - 110,000 (\frac{3}{12}) \text{ shares at Jan. 1}} ) = ($1.23)</td>
</tr>
</tbody>
</table>

#### 2013

<table>
<thead>
<tr>
<th>Earnings Per Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \frac{$3,308,700}{1,745,000 \times (1.02) \text{ shares at Jan. 1}} ) = ($1.86)</td>
</tr>
</tbody>
</table>

---

* 1,855,000 – 110,000 = 1,745,000 shares

** This is a 2% stock dividend: \( \frac{34,900}{1,745,000} = 2\% \). Alternatively, the additional 34,900 shares could be simply added to the 1,745,000 initial shares outstanding.
Problem 19–11

(amounts in millions, except per share amount)

2011

\[
\begin{array}{ccc}
\text{net income} & \text{preferred dividends} & \text{Earnings Per Share} \\
$290 & -$1 & $289 \\
\hline \\
\text{shares at Jan. 1} & \frac{55 + 9 (6/12)}{59.5} \text{ new shares} & = \frac{59.5}{59.5} = $4.86 \\
\end{array}
\]

2012

\[
\begin{array}{ccc}
\text{net income} & \text{preferred dividends} & \text{Earnings Per Share} \\
$380 & -$1 & $379 \\
\hline \\
\text{shares at Jan. 1} & \frac{64 (1.50) - 4 (9/12) (1.50)}{91.5} \text{ retired shares} & = \frac{91.5}{91.5} = $4.14 \\
\end{array}
\]

2013

\[
\begin{array}{ccc}
\text{net income} & \text{preferred dividends} & \text{Earnings Per Share} \\
$412 & -$2 & $410 \\
\hline \\
\text{shares at Jan. 1} & \frac{90 (1.10) + 3 (4/12)}{100} \text{ new shares} & = \frac{100}{100} = $4.10 \\
\end{array}
\]
Problem 19–12

(amounts in thousands, except per share amount)

\[
\begin{array}{ccc}
\text{net income} & \text{preferred dividends} & \text{Earnings Per Share} \\
$2,100 & -$75 & $2,025 \\
\hline
600 \times (1.04) & + 60 \times \left(\frac{10}{12}\right) \times (1.04) & - 2 \times \left(\frac{6}{12}\right) \\
\text{shares at Jan. 1} & \text{new shares} & \text{shares retired} \\
\uparrow \text{stock dividend} \uparrow & & 675 \\
\text{adjustment} & & = \$3.00 \\
\end{array}
\]
Problem 19–13

The options issued in 2012 are not considered when calculating 2013 EPS because the exercise price ($33) is not less than the 2012 average market price of $32. As a result, these options are antidilutive.

The options issued in 2013 do not affect the calculation of 2013 EPS for two reasons related to their being issued at December 31. First, the exercise price ($32) is equal to the 2013 average market price of $32. While they are not antidilutive, neither are they dilutive. Second, even if the exercise price had been less than the market price, these options would be excluded. Options are assumed exercised at the beginning of the year or when granted, whichever is later—when granted, in this case. So, the fraction of the year the shares are assumed outstanding is 0/12, meaning no increase in the weighted-average shares.

The options issued in 2011 are considered exercised for 8,000 shares when calculating 2013 EPS because the exercise price ($24) is less than the 2013 average market price of $32. Treasury shares are assumed repurchased at the average price for diluted EPS:

\[
\begin{align*}
8,000 \text{ shares} & \times \frac{\$24 \text{ (exercise price)}}{\$192,000} \\
& \div \frac{\$32 \text{ (average market price)}}{6,000 \text{ shares}}
\end{align*}
\]
Problem 19–13 (concluded)

(amounts in thousands, except per share amount)

Basic EPS

\[
\begin{array}{ccc}
\text{net income} & \text{preferred dividends} \\
$2,100 & - $75 \\
\hline
\end{array}
\]

\[
\frac{600(1.04)}{600} + \frac{60}{(10/12)} \times (1.04) - \frac{2}{(6/12)} \times 675 = \frac{2,025}{600} = $3.00
\]

\[
\uparrow \text{stock dividend} \uparrow \text{adjustment}
\]

Diluted EPS

\[
\begin{array}{ccc}
\text{net income} & \text{preferred dividends} \\
$2,100 & - $75 \\
\hline
\end{array}
\]

\[
\frac{600(1.04)}{600} + \frac{60}{(10/12)} \times (1.04) - \frac{2}{(6/12)} + \frac{(8 - 6)}{677} = \frac{2,025}{600} = $2.99
\]

\[
\uparrow \text{stock dividend} \uparrow \text{adjusted}
\]
Problem 19–14

The options issued in 2012 are not considered when calculating 2013 EPS because the exercise price ($33) is not less than the 2012 average market price of $32. As a result, these options are antidilutive.

The options issued in 2013 do not affect the calculation of 2013 EPS for two reasons related to their being issued at December 31. First, the exercise price ($32) is equal to the 2013 average market price of $32. While they are not antidilutive, neither are they dilutive. Second, even if the exercise price had been less than the market price, these options would be excluded. Options are assumed exercised at the beginning of the year or when granted, whichever is later—when granted, in this case. So, the fraction of the year the shares are assumed outstanding is $0/12$, meaning no increase in the weighted-average shares.

The options issued in 2011 are considered exercised for 8,000 shares when calculating 2013 EPS because the exercise price ($24) is less than the 2013 average market price of $32. Treasury shares are assumed repurchased at the average price for diluted EPS:

\[
\frac{8,000 \text{ shares}}{x} \times \frac{\$24 \text{ (exercise price)}}{$192,000} \div \frac{\$32 \text{ (average market price)}}{6,000 \text{ shares}}
\]
Problem 19–14 (concluded)

(amounts in thousands, except per share amounts)

Basic EPS

\[
\text{net income}\quad \text{preferred dividends}
\begin{array}{ccc}
\$2,100 & -75 & \$2,025 \\
\end{array}
\]

\[
\frac{600(1.04) + 60 \left(\frac{10}{12}\right) (1.04) - 2 \left(\frac{6}{12}\right)}{675} = \frac{\$2,025}{\text{shares at Jan. 1}} = \$3.00
\]

\[\text{↑ stock dividend ↑ stock dividend ↓ adjustment}\]

Diluted EPS

\[
\text{net income}\quad \text{preferred dividends}\quad \text{after-tax interest savings}
\begin{array}{ccc}
\$2,100 & -75 & +80 - 40\%($80) & \$2,073 \\
\end{array}
\]

\[
\frac{600(1.04) + 60 \left(\frac{10}{12}\right) (1.04) - 2 \left(\frac{6}{12}\right) + (8 - 6) + 23 + 24}{724} = \frac{\$2,073}{\text{shares at Jan. 1}} = \$2.86
\]

\[\text{↑ stock dividend ↑ stock dividend ↓ adjustment}\]

* The contingently issuable shares are considered issued when calculating diluted EPS because the condition for issuance (Merrill net income > $500,000) currently is being met.

** The bonds are considered converted when calculating diluted EPS: 800 bonds x 30 shares = 24,000 shares upon conversion. Interest = $800,000 x 10% = $80,000.
Problem 19–15

(amounts in millions, except per share amounts)

Basic EPS

\[
\begin{align*}
\text{net income} & \quad \text{preferred dividends} \\
$520 & \quad -120^* \\
\hline
\end{align*}
\]

\[
\frac{\$400}{100} = \frac{\$4.00}{100} = \$4.00
\]

100 shares at Jan. 1

The incremental effect of the conversion of the preferred stock is:

\[
\frac{\text{preferred dividends}}{\text{conversion of preferred stock}} + 120^* = 3.75
\]

The incremental effect of the conversion of the bonds is:

\[
\frac{\text{after-tax interest savings}}{\text{conversion of bonds}} + \$90^{**} - 40\% (\$90^{**}) + 13.5 = 4.00
\]

* 60 million shares x $2

** $900 million x 10%

Order of Entry:
We include in our calculation the convertible security with the lowest “incremental effect” ($3.75) before the one with the higher effect ($4.00).
After including the conversion of the preferred stock only, EPS is $3.94. The $4.00 incremental effect of the conversion of the bonds is higher than that amount, so the second security is antidilutive. This is demonstrated by calculating EPS again after including the conversion of the bonds:

### Diluted EPS (with conversion of bonds)

\[
\begin{array}{ccc}
\text{net income} & \text{preferred dividends} & \text{after-tax interest savings} \\
$520 & -120^* & +$90^{**} - 40\% ($90^{**}) \\
\hline
100 & +32 & +13.5 \\
\hline
\end{array}
\]

\[
\frac{574}{145.5} = 3.95
\]

So, we omit the convertible bonds from the calculation and diluted EPS is $3.94. That’s why we should include securities in the calculation in reverse order, beginning with the lowest incremental effect (most dilutive).

* 60 million shares x $2
** $900 million x 10%
Problem 19–16

Requirement 1

(amounts in thousands, except per share amount)

**Basic EPS:**

\[
\frac{\text{net income}}{\text{weighted-average shares}} = \frac{\$150 \text{ - } \$77}{40} = \frac{\$73}{40} = \$1.83
\]

**With conversion of preferred stock**

(Diluted EPS):

\[
\frac{\text{net income}}{\text{weighted-average shares} + \text{conversion of preferred shares}} = \frac{\$150}{40 + 20} = \frac{\$150}{60} = \$2.50
\]

Since the assumed conversion of the convertible preferred stock causes EPS to increase, it is **antidilutive** and therefore ignored when calculating EPS.
Problem 19–16 (concluded)

Requirement 2

Basic EPS:
\[
\frac{\text{net income}}{\text{weighted-average shares}} = \frac{\$150}{40} = \$3.75
\]

With conversion of bonds:
\[
\frac{\text{net income} + \text{after-tax interest savings}}{\text{weighted-average conversion shares}} = \frac{\$150 + (\$40 \times (1-0.40))}{40 + 5} = \frac{\$174}{45} = \$3.87
\]

Since the assumed conversion of the convertible bonds causes EPS to increase, it is antidilutive and therefore ignored when calculating EPS.

Requirement 3

Since the exercise price is less than average market price, the options are not antidilutive and therefore assumed exercised when calculating diluted EPS.

Requirement 4

Since the exercise price is higher than the average market price, the warrants are antidilutive and therefore ignored when calculating diluted EPS.

Requirement 5

The 5,000 shares are added to the denominator when calculating diluted EPS since 2013 net income is higher than the conditional amount. Since only the denominator is increased, the effect is not antidilutive (that is, dilutive).
Problem 19–17

(amounts in millions, except per share amounts)

**Basic EPS**

\[
\text{Basic EPS} = \frac{\text{Net Income}}{\text{Weighted Average Number of Shares}}
\]

\[
\frac{560}{400 - 30 \left( \frac{4}{12} \right)} = \frac{560}{390} = 1.44
\]

**Diluted EPS**

\[
\text{Diluted EPS} = \frac{\text{Net Income + After-tax Interest Savings}}{\text{Weighted Average Number of Shares}}
\]

\[
\frac{560 + 30 - 40\% \times 30}{400 - 30 \left( \frac{4}{12} \right) + 36} = \frac{578}{426} = 1.36
\]

*Interest on the bonds = $300 million x 10% = $30 million. If the bonds were not outstanding, interest expense would have been $30 million lower, and tax expense would have been 40% x $30 million, or $12 million higher, a net after-tax savings of $18 million.*
Problem 19–18

(amounts in thousands, except per share amounts)

**Basic EPS**

<table>
<thead>
<tr>
<th>net income</th>
<th>preferred dividends</th>
<th>$650</th>
<th>– $40*</th>
<th>$600</th>
</tr>
</thead>
<tbody>
<tr>
<td>440 shares at Jan. 1</td>
<td>+ 16 (3/12)</td>
<td>444</td>
<td>$1.37</td>
<td></td>
</tr>
</tbody>
</table>

**Diluted EPS**

<table>
<thead>
<tr>
<th>net income</th>
<th>preferred dividends</th>
<th>preferred dividends</th>
<th>$650</th>
<th>+ 40*</th>
<th>$650</th>
</tr>
</thead>
<tbody>
<tr>
<td>440 shares at Jan. 1</td>
<td>+ 16 (3/12)</td>
<td>+ (20 – 15**)</td>
<td>+ 40</td>
<td>489</td>
<td>$1.33</td>
</tr>
</tbody>
</table>

* 4,000 shares x $100 par x 10% = $40,000

** **Assumed purchase of treasury shares**

<table>
<thead>
<tr>
<th>x</th>
<th>$30</th>
<th>(exercise price)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$600,000</td>
<td>÷</td>
<td>$40</td>
</tr>
<tr>
<td>15,000</td>
<td>shares</td>
<td></td>
</tr>
</tbody>
</table>
Problem 19–19

(amounts in millions, except per share amounts)

Basic EPS

\[
\begin{align*}
\text{net income} & \quad \text{preferred dividends} \\
$1,476 & \quad - $60^* \\
\hline
600 & \quad + 72 (4/12) \\
\end{align*}
\]

\[\frac{600}{624} = \frac{1,416}{2.27}\]

\[= \frac{1,416}{624} = \frac{2.27}{1}\]

\[= \frac{1,416}{624} = \frac{2.27}{1}\]

Diluted EPS

\[
\begin{align*}
\text{net income} & \quad \text{preferred dividends} & \quad \text{after-tax interest savings} \\
$1,476 & \quad - $60^* & \quad + $160 - 40\% ($160) \\
\hline
600 & \quad + 72 (4/12) & \quad + (60 - 40)^{**} \quad + 80 \\
\end{align*}
\]

\[\frac{600}{724} = \frac{1,512}{2.09}\]

\[= \frac{600}{724} = \frac{1,512}{2.09}\]

*Preferred dividends: 6% x $50 x 20 million shares = $60 million

**Computation of treasury shares:

\[
\begin{align*}
60 \text{ million} & \quad \times \frac{12}{12} \\
\$720 \text{ million} & \quad \text{exercise price} \\
\frac{60 \times 12}{18} & \quad \text{proceeds} \\
\frac{40 \text{ million}}{18} & \quad \text{average share price} \\
\end{align*}
\]
Problem 19–20

Requirement 1

(amounts in millions, except per share amount)

2013 Basic EPS

\[
\text{net income} \quad \frac{150}{300} = \frac{150}{300} = \$0.50
\]

2013 Diluted EPS

\[
\text{net income} \quad \frac{150}{300 + (30 - 27.5^*) + (15 - 11.25^{**})} = \frac{150}{306.25} = \$0.49
\]

* Reacquired shares for assumed exercise of stock options in 2013:

\[
30 \text{ million options} \times \frac{10}{300} = \$90 \text{ million}
\]

** Calculation of proceeds from unexpensed compensation:

30 million shares x $3 = $90 million total compensation to be expensed $30 million per year over 3 years (2012–2014). The expense has been recorded in 2012 and 2013:

<table>
<thead>
<tr>
<th>Year</th>
<th>Compensation expense</th>
<th>Paid-in capital—stock options</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>$30</td>
<td>$30</td>
</tr>
<tr>
<td>2013</td>
<td>$30</td>
<td>$30</td>
</tr>
</tbody>
</table>
Problem 19–20 (continued)

So, $30 million compensation (for 2014) remains unexpensed and is considered part of the hypothetical proceeds of the options.

Because these are incentive stock options, excess tax benefits are not considered to be part of the proceeds.

Restricted Stock Award
Like stock options, restricted stock awards represent potential common shares and their dilutive effect is included in diluted EPS. In fact, they too are included using the treasury stock method. That is, the shares are added to the denominator and then reduced by the number of shares that can be bought back with the “proceeds” at the average market price of the company’s stock. Unlike stock options, though, the first component of the proceeds is absent.

*** Reacquired shares for assumed vesting of restricted stock in 2013:

\[
\begin{array}{ccl}
& & \\
$0 & \text{million cash proceeds} & \\
135 & \text{unexpensed compensation} & \text{****} \\
135 & \text{million hypothetical proceeds} & \\
\div & 12 & \text{average market price} \\
& 11.25 & \text{million shares assumed reacquired} \\
\end{array}
\]

**** Calculation of proceeds from unexpensed compensation:

15 million shares \( \times \) $12 = $180 million total compensation to be expensed $45 million per year over four years. The expense has been recorded in 2013:

\[
\begin{array}{ccc}
\text{2013} & \text{($ in millions)} \\
\text{Compensation expense} & 45 \\
\text{Paid-in capital—restricted stock} & 45 \\
\end{array}
\]

So, $135 million compensation (for 2014–2016) remains unexpensed and is considered part of the hypothetical proceeds of the options.

This would also be increased (or decreased) by any tax benefits that would be added to (or deducted from) paid-in capital when the eventual tax deduction differs from the amount expensed. Since that occurs when the stock price at vesting differs from the stock price at the grant date and the average market price remained at $12, this component is zero in 2013.
Problem 19–20 (continued)

Requirement 2

(amounts in millions, except per share amount)

2014 Basic EPS

\[
\text{net income} \quad \frac{\$160}{300 \text{ shares at Jan. 1}} = \frac{\$160}{300} = \$0.53
\]

2014 Diluted EPS

\[
\text{net income} \quad \frac{\$160}{300 \text{ shares at Jan. 1} + (30 - 20^*) + (15 - 7.2^{**})} = \frac{\$160}{317.8} = \$0.50
\]

* Reacquired shares for assumed exercise of stock options in 2014:

\[
30 \text{ million options} \times \frac{\$10}{\text{exercise price}} \times \frac{\$300}{\text{million cash proceeds}} \times \frac{0}{\text{unexpensed compensation**}} \times \frac{\$300}{\text{million hypothetical proceeds}} \times \frac{\$15}{\text{average market price in 2014}} \times \frac{20}{\text{million shares assumed reacquired}}
\]

** Calculation of proceeds from unexpensed compensation:

30 million shares x $3 = $90 million total compensation to be expensed $30 million per year over 3 years. The expense has been recorded in 2012, 2013, and 2014, so no unexpensed compensation remains.

Because these are incentive stock options, excess tax benefits are not considered to be part of the proceeds.
Restricted Stock Award

*** Reacquired shares for assumed vesting of restricted stock in 2014:

- 0 million cash proceeds
- 90 million unexpensed compensation****
- 18 million excess tax benefit
- 108 million hypothetical proceeds
- 15 average market price
- 7.2 shares assumed reacquired

**** Calculation of proceeds from unexpensed compensation:

15 million shares x $12 = $180 million total compensation to be expensed $45 million per year over four years. The expense has been recorded in 2013 and 2014:

<table>
<thead>
<tr>
<th>Year</th>
<th>Compensation expense</th>
<th>Paid-in capital—restricted stock</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>45</td>
<td>45</td>
</tr>
<tr>
<td>2014</td>
<td>45</td>
<td>45</td>
</tr>
</tbody>
</table>

So, $90 million compensation (for 2015–2016) remains unexpensed and is considered part of the hypothetical proceeds of the options. The proceeds also are increased by the excess tax benefit:

- 15 market price during 2014 (and thus price at hypothetical vesting)
- (12) fair value at grant date (and amount expensed over the vesting period)
- 3 excess tax deduction per share
- x 15 million shares
- 45 million excess tax deduction
- x 40% tax rate
- 18 million excess tax benefit
CASES

Real World Case 19–1

Requirement 1

The shares are restricted in such a way as to provide some incentive to the recipient. Microsoft’s restricted stock award plans are tied to continued employment. The shares are subject to forfeiture by the employee if employment is terminated within five years from the date of grant. These restrictions give the employee incentive to remain with the company until rights to the shares vest.

Requirement 2

Compensation pertaining to pre-2011 grants:

- 223 x $24.76 = $5,521.48 Nonvested, beg. fiscal 2011
- 63 x $25.00 = (1,575.00) Vested during fiscal 2011
- 19 x $23.97 = (455.43) Forfeited during fiscal 2011

Outstanding all year

$3,491.05 ÷ 5 yrs

$698.2 Expense during 2011 for outstanding restricted (nonvested) shares

$1,575 x ½ yr* = 787.5 Expense during 2011 for vested shares

Forfeited in 2011:

**Granted in 2008** ($455.43 x 1/3 = $151.8):
- Expensed in 2008: $151.8 ÷ 5 yrs = 30.4
- Expensed in 2009: $151.8 ÷ 5 yrs = 30.4
- Expensed in 2010: $151.8 ÷ 5 yrs = 30.4

**Granted in 2009** ($455.43 x 1/3 = $151.8):
- Expensed in 2009: $151.8 ÷ 5 yrs = 30.4
- Expensed in 2010: $151.8 ÷ 5 yrs = 30.4

**Granted in 2010** ($455.43 x 1/3 = $151.8):
- Expensed in 2010: $151.8 ÷ 5 yrs = 30.4

(182.4) Reduction in expense for forfeited shares**

$1,303.3 2011 expense for previous awards
Case 19–1 (concluded)

$1,303.3  2011 expense for previous awards

2011 grants:

151.8 x $22.17 ÷ 5 yrs x ½ yr = 336.5  2011 expense for 2011 awards

$1,639.8  Total 2011 expense

* Vested evenly throughout the year.
** Expense is reduced in year of forfeiture for amount expensed in two previous years.
Communication Case 19–2

Suggested Grading Concepts and Grading Scheme:

Content (80%)

_____ 30 Measurement of compensation.
    ____ Compensation cost should be measured at the date of grant.
    ____ Fair value of the stock options.
    ____ Estimated by employing a recognized option pricing model.
    ____ Value per option times number of options.
    ____ Can be adjusted for estimated forfeiture rate.
    ____ No entry on grant date.

_____ 25 Determination of compensation expense.
    ____ Expensed over the period of service for which the options are given, 2013–2015.
    ____ Debit compensation expense.
    ____ Credit paid-in capital—stock options.
    ____ Not adjusted when the price of the underlying stock changes.

_____ 15 Effect of forfeiture before vesting.
    ____ Reduce compensation expense in forfeiture period for the cumulative effect of the revised estimate.
    ____ Revise compensation expense for remaining service period.

_____ 10 Effect of forfeiture after vesting.
    ____ Paid-in capital—stock options becomes Paid-in capital—expiration of stock options.
    ____ Compensation expense of previous periods cannot be reversed for vested options.

_____ Bonus (5) For unvested, nonqualifying options:
    Proceeds for TS method include unexpensed compensation.
    Proceeds for TS method include excess tax benefit.

_____ Bonus (5) Option pricing model considers:
    Exercise price of the option.
    Expected term of the option.
    Current market price of the stock.
    Expected dividends.
    Expected risk-free rate of return.
    Expected volatility of the stock.

_____ 80–85 points
Case 19–2 (concluded)

Writing (20%)

_____  5  Terminology and tone appropriate to the audience of controller.

_____  6  Organization permits ease of understanding.

      ____ Introduction that states purpose.
      ____ Paragraphs separate main points.

_____  9  English.

      ____ Word selection.
      ____ Spelling.
      ____ Grammar.

_____  20 points
Ethics Case 19–3

Discussion should include these elements:

**Facts:**
The choice of method will affect earnings. FIFO will increase reported net income.
FIFO will cause an increase in taxes paid.
Company managers stand to benefit from the change.
The auditor risks negative consequences if the change is challenged.

**Ethical Dilemma:**
Is the auditor’s obligation to challenge the questionable change in methods greater than the obligation to the financial interests of the CPA firm and its client?

**Who is affected?**
You, the auditor
Managers
CPA firm (lost fees? reputation? legal action?)
Shareholders
Potential shareholders

[From research performed in this area, it is not clear that accounting changes that increase earnings without any real economic (cash flow) effect will have the desired effect of increasing share price. In fact, the preponderance of such research indicates that the market “sees through” cosmetic accounting changes. Nevertheless, there is plenty of evidence, at least anecdotal, that managers attempt to fool the market. Some efforts to manage earnings may not be an attempt to affect share prices, but to avoid violating terms of contracts based on earnings or related balance sheet items. Some may be to favorably affect terms of compensation agreements.]

The employees
The creditors

Trueblood Accounting Case 19–4
A solution and extensive discussion materials accompany each case in the Deloitte & Touche Trueblood Case Study Series. These are available to instructors at: www.deloitte.com/us/truebloodcases.

Real World Case 19–5

Requirement 1

Whether an incentive plan is a stock option plan, a stock award plan, a performance award plan, or one of the various similar plans, the intention is to provide compensation to designated employees, while at the same time providing those employees with some sort of performance incentive. Likewise, our reporting objectives in accounting for these plans are the same for each: (1) to determine the fair value of the compensation and (2) to expense that compensation over the periods in which participants perform services.

Requirement 2

The $371 million Walmart reported as share-based expense in 2011 includes, among amounts for other forms of share-based compensation, that period’s portion of the value of options granted in 2011 and prior years. Each reporting period, Walmart determines the fair value of the options granted that period and expenses that compensation over the periods in which participants perform services, usually the vesting period for the options. So, for instance, if options granted in 2009 had a value of $80 million and a four-year vesting period, $20 million of that amount would be part of the $371 million expensed in 2011.
Real World Case 19–6

Employee share purchase plans allow employees to buy company stock under convenient or favorable terms. Most such plans are considered compensatory and require the fair value of any discount to be recorded as compensation expense. Microsoft’s employee purchases during 2011 can be summarized as follows:

($ in millions)

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash ($22.98 x 20)</td>
<td>459.60</td>
</tr>
<tr>
<td>Compensation expense ($510.67 x 10%)</td>
<td>51.07</td>
</tr>
<tr>
<td>Common stock and paid-in capital ($459.6 ÷ .90)*</td>
<td>510.67</td>
</tr>
</tbody>
</table>

* Employees pay 90% of the stock’s value; the 10% difference is compensation expense.
Ethics Case 19–7

Discussion should include these elements.

**Effect of share repurchase on EPS.**
Reducing the number of shares will increase earnings *per share*. That impact will be lessened, though, the closer to the end of the year the shares are bought due to the way the share reduction is “time-weighted” for the fraction of the year they are not outstanding.

**Ethical Dilemma:**
Apparently, a more productive use for available funds will be offered by Barber. How does a less-than-optimal use of company funds compare with the perceived need to maintain a record of increasing reported EPS?

**Who is affected?**
Mashburn
Lane
Managers under the bonus plan
Shareholders
Potential shareholders
Employees
Creditors
Real World Case 19–8

Requirement 1

The note indicates that “diluted net income (loss) per common share is computed using the weighted-average number of common and dilutive common equivalent shares outstanding during the period. Securities, like stock options, restricted stock awards, or convertible bonds, while not being common stock, may become common stock through their exercise, vesting, or conversion. As a result, they may dilute (reduce) earnings per share and therefore are called “potential common shares.” Diluted EPS incorporates the dilutive effect of all potential common shares.

Requirement 2

For the fiscal years 2010 and 2009, Sun added 13 million and 19 million common equivalent shares, respectively, to its basic weighted-average shares outstanding to compute the diluted weighted-average shares outstanding.” To include the dilutive effect of a security means to calculate EPS as if the potential increase in shares already has occurred, even though it hasn’t yet. Sun specified that its “dilutive common equivalent shares consist primarily of stock options and restricted stock awards.” Therefore, for its stock options Sun “pretends” the options have been exercised. Specifically, it assumed the options were exercised at the beginning of the reporting period, or when the options were issued if that’s later. Sun assumed the cash proceeds from selling the new shares at the exercise price were used to buy back as many shares as possible at the average market price of the shares for the year. Sun also “pretends” the restricted stock has vested. The “proceeds” used to buy back as many shares as possible at the shares’ average market price are assumed to be the unexpensed portion of the share-based compensation for the stock awards. So, the 13 million potential common shares added to the denominator in 2010 represents the net difference between (a) the shares issued from the pretend exercise of options and vesting of restricted stock and (b) the shares that could be repurchased with the proceeds.
Case 19–8 (concluded)

Requirement 3

In fiscal 2011, Sun does not include dilutive potential common shares. The disclosure note stated: “As a result of our net loss for the fiscal year ended June 30, 2011, all potentially dilutive shares were anti-dilutive and therefore excluded from the computation of diluted net loss per share.” If Sun had included 20 million dilutive potential common shares in 2011, the loss per share would have declined from ($2.99) to ($2.91), ($2,234) ÷ [747 + 20]. Whenever a company reports a net loss, as Sun did, it reports a loss per share. In that situation, stock options or restricted stock that otherwise are dilutive will be antidilutive. The loss per share declines. This represents an increase in performance—not a dilution of performance. The potential common shares would be considered antidilutive, then, and not included in the calculation of the net loss per share.
Analysis Case 19–9

Requirement 1
When calculating basic earnings per share, the numerator in the computation is the earnings available to common shareholders. This will be net income reduced by dividends payable to preferred shareholders. Since the preferred stock is cumulative we subtract preferred dividends even if not declared. Because unpaid dividends accumulate to be paid in a future year when (if) dividends are subsequently declared, the presumption is that, although the year’s dividend preference isn’t distributed this year, it eventually will be paid.

Requirement 2
When calculating basic earnings per share, the denominator in the computation is the weighted-average number of common shares outstanding during 2011. Thus, the 8 million shares outstanding at January 1, 2011, plus a portion of the shares sold will result in the weighted-average number of shares outstanding for calculating basic EPS. The 3 million common shares issued during 2011 must be included in computing the weighted-average number of shares outstanding. The 3 million shares will be weighted one-third because they were outstanding only for the four months of 2011. The 1 million common shares issued upon the exercise of stock options must be included in computing the weighted-average number of shares outstanding. The 1 million shares will be weighted one-half because they were outstanding only for the six months of 2011.

Requirement 3
When calculating diluted earnings per share, the numerator in the computation is the earnings available to common shareholders. Proactive will not reduce net income by dividends payable to preferred shareholders because it will treat the convertible preferred stock as if the preferred shares were converted and 4 million common shares were outstanding, unless including these shares in the denominator would increase earnings per share (be antidilutive). This means that for antidilution it would not reduce the numerator for the preferred dividends as it would do if the preferred shares were assumed outstanding, as in calculating basic EPS.

Requirement 4
When calculating diluted earnings per share, the denominator in the computation is the weighted-average number of common shares outstanding during the reporting period. But since potential common shares exist in a complex capital structure, as in this situation, the calculation of the denominator becomes more involved.
Case 19–9 (concluded)

We begin by determining the weighted-average of the number of common shares outstanding during 2011, the 8 million shares outstanding at January 1, 2011, plus a portion of the shares sold. The 3 million common shares issued during 2011 must be included in computing the weighted-average number of shares outstanding. The 3 million shares will be weighted one-third because they were outstanding only for the four months of 2011. The 1 million common shares issued upon the exercise of stock options must be included in computing the weighted-average number of shares outstanding. The 1 million shares will be weighted one-half because they were outstanding only for the six months of 2011.

For diluted EPS, two adjustments are needed to the denominator. First, we treat the convertible preferred stock as if the preferred shares were converted and 4 million additional common shares were outstanding, unless including these shares in the denominator would increase earnings per share (be antidilutive). As noted in Requirement 2, this means also that we would not reduce the numerator for the preferred dividends as we would do if the preferred shares were assumed still outstanding.

Second, we treat the stock options outstanding under the employee stock option plan as having been exercised. The number of common shares represented by the options outstanding should be computed by application of the treasury stock method. By this method, earnings per share is computed as if the options were exercised at the beginning of the period (or at time of issue, if later) and as if the hypothetical proceeds were used to purchase common stock at the average market for the period.

The weighted-average number of shares outstanding for 2011 includes the incremental shares (determined by the treasury stock method) represented by the 1 million options outstanding for the full year.

The options outstanding for only part of the reporting period are included in the denominator on a time-weighted basis. For the 1.5 million options granted during the year, the denominator would include the appropriate incremental shares (determined by the treasury stock method) times the appropriate time-weighting fraction for the period from the grant date to the end of the year. (They can’t be assumed to have been exercised before they were granted.) Similarly, for the 1 million options actually exercised during the year, the weighted-average shares should include (a) the appropriate incremental shares (determined by the treasury stock method) times the appropriate time-weighting fraction for the period prior to actual exercise and (b) the appropriate actual shares issued times the appropriate time-weighting fraction for the period after the exercise.
Analysis Case 19–10

Requirement 1

Earnings per share is a way to summarize the performance of business enterprises into a single number. It is simply earnings expressed on a per share basis. It does not imply anything about cash dividends. Whether some, all, or none of the earnings are distributed depends on the company’s reinvestment strategy. A dividend payout ratio expresses the percentage of earnings that is distributed to shareholders as dividends.

Requirement 2

When calculating earnings per share, shares outstanding prior to a stock split (or stock dividend) are retroactively restated to reflect the increase in shares. That is, it is treated as if the split occurred at the beginning of the year. EPS is likewise adjusted for a reverse stock split. When calculating earnings per share, shares outstanding prior to a reverse split are retroactively restated to reflect the decrease in shares (95% in this instance). That is, it is treated as if the June share decrease occurred at the beginning of the year.

When reported again for comparison purposes in the comparative income statements, the year earlier figure also would be restated to reflect the reverse stock split. Otherwise we would be comparing apples and oranges.

Requirement 3

If the number of shares changes, it’s necessary to find the weighted-average of the shares outstanding during the period the earnings were generated. If shares are reacquired during a period, AIG would reduce the weighted-average number of shares. The company time-weights the number of reacquired shares for the fraction of the year they were not outstanding, prior to subtracting from the number of shares outstanding during the period. The effect would be an increase in EPS.

Requirement 4

Yes, it is. If we don’t take into account the dilutive effect of the share increase we might mislead investors and creditors. So, in addition to basic EPS, we also calculate diluted EPS to include the dilutive effect of options and other potential common shares. This means to calculate EPS as if the potential increase in shares already has occurred (even though it hasn’t yet). For AIG’s stock options, the calculation assumes the options were exercised at the beginning of the reporting period. Then the hypothetical proceeds are used to buy back as many shares as possible at the shares’ average market price for the year.
**Judgment Case 19–11**

Although net income declined during the period, a combination of events caused EPS to increase in spite of declining profits. Specifically, retiring the preferred shares increased earnings available to common shareholders; retiring common shares and retiring convertible debt each decreased the weighted-average number of common shares. The following calculations show the effect of these events:

(amounts in millions, except per share amount)

**2011**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th>Basic EPS</th>
</tr>
</thead>
<tbody>
<tr>
<td>net income</td>
<td>$145</td>
<td>preferred dividends</td>
<td>$129</td>
</tr>
<tr>
<td>dividends</td>
<td>$16*</td>
<td>$16*</td>
<td>$2.15</td>
</tr>
<tr>
<td>shares at Jan. 1</td>
<td>60</td>
<td>60</td>
<td></td>
</tr>
</tbody>
</table>

\[
\frac{\text{net income} - \text{preferred dividends}}{\text{shares at Jan. 1}} = \frac{\$145 - \$16*}{60} = \frac{\$129}{60} = \$2.15
\]

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th>Diluted EPS</th>
</tr>
</thead>
<tbody>
<tr>
<td>net income</td>
<td>$145</td>
<td>preferred dividends</td>
<td>after-tax interest savings</td>
</tr>
<tr>
<td>dividends</td>
<td>$16*</td>
<td>$16*</td>
<td>$5 - 40% ($5)</td>
</tr>
<tr>
<td>conversion of bonds</td>
<td>9</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>shares at Jan. 1</td>
<td>60</td>
<td>69</td>
<td>69</td>
</tr>
</tbody>
</table>

\[
\frac{\text{net income} - \text{preferred dividends} + \text{after-tax interest savings}}{\text{shares at Jan. 1} + \text{conversion of bonds}} = \frac{\$145 - \$16* + \$5 - 40% ($5)}{60 + 9} = \frac{\$132}{69} = \$1.91
\]

* 8% x [$10 x 20 million] = $16
**Case 19–11 (concluded)**

### 2012

<table>
<thead>
<tr>
<th>net income</th>
<th>preferred dividends</th>
<th>Basic EPS</th>
</tr>
</thead>
<tbody>
<tr>
<td>$134</td>
<td>$12†</td>
<td>$122</td>
</tr>
</tbody>
</table>

\[
\frac{60 - 12 \left(\frac{10}{12}\right)}{50} = 2.44
\]

<table>
<thead>
<tr>
<th>net income</th>
<th>preferred dividends</th>
<th>after-tax interest savings</th>
<th>Diluted EPS</th>
</tr>
</thead>
<tbody>
<tr>
<td>$134</td>
<td>$12†</td>
<td>$5 - 40% ($5)</td>
<td>$125</td>
</tr>
</tbody>
</table>

\[
\frac{60 - 12 \left(\frac{10}{12}\right) + 9}{59} = 2.12
\]

### 2013

<table>
<thead>
<tr>
<th>net income</th>
<th>Basic EPS</th>
</tr>
</thead>
<tbody>
<tr>
<td>$95</td>
<td>$95</td>
</tr>
</tbody>
</table>

\[
\frac{48 - 12 \left(\frac{10}{12}\right)}{38} = 2.50
\]

<table>
<thead>
<tr>
<th>net income</th>
<th>Diluted EPS</th>
</tr>
</thead>
<tbody>
<tr>
<td>$95</td>
<td>$95</td>
</tr>
</tbody>
</table>

\[
\frac{48 - 12 \left(\frac{10}{12}\right)}{38} = 2.50
\]

† $16 – (6/12 x 8% x [$10 x 20 million x 1/2]): calculation reflects the retirement of half the shares on July 1

† $16 – (6/12 x 8% x [$10 x 20 million x 1/2]): calculation reflects the retirement of half the shares on July 1
Convertible securities are included in the computation. Of diluted earnings per share. By assuming they were converted, the “if-converted” method, as it’s called. The denominator of the EPS fraction is increased by the additional common shares that would have been issued upon conversion. The numerator is increased by the interest (after-tax) or preferred dividends that would have been avoided.

Antidilutive securities. Antidilutive means EPS increases rather than decreases. Ignored when calculating earnings per share.

Bonus (4) Provides detail regarding the tax effect calculation for convertible bonds. Interest on bonds is tax deductible. Tax expense will increase by the tax rate times interest.
Real World Case 19–13

Requirement 1

Other potential common shares might include restricted stock, convertible securities and contingently issuable shares.

Stock options give their holders the right to purchase common stock at a specified exercise price. The dilution that would result from their exercise should be reflected in the calculation of diluted EPS, but not basic EPS. To include the dilutive effect of a security means to calculate EPS as if the potential increase in shares already has occurred (even though it hasn’t yet). So, for stock options, we “pretend” the options have been exercised. In fact, we assume the options were exercised at the beginning of the reporting period, or when the options were issued if that’s later. We then assume the hypothetical proceeds from selling the new shares at the exercise price are used to buy back as many shares as possible at the shares’ average market price for the year.

The proceeds for the calculation should include the amount received from the hypothetical exercise of the options, but should also include two additional amounts.

The first additional component of the proceeds is the total compensation from the award that's not yet been expensed. When options or restricted stock are fully vested, all the compensation already has been expensed and this second component of the proceeds will be zero. If the options are only half vested, half the compensation would have been unexpensed and half the compensation would be added to the proceeds. A second additional component of the proceeds is what's called the "excess tax benefit." We expense the grant-date fair value of stock options and restricted stock. If the awards are nonqualified, rather than incentive plans, the corporation receives a tax deduction at exercise equal to the difference between the stock's market value and its exercise price. That amount usually is higher than the fair value at the grant date, and the difference times the tax rate is the excess tax benefit. Restricted stock is assumed issued with shares repurchased using this same “treasury stock method.”

Similarly, we would assume convertible securities had been converted into shares. This means adding the new shares to the denominator and increasing the numerator by the after-tax effect of the convertible security not being outstanding.
Case 19–13 (continued)

Sometimes an agreement specifies that additional shares of common stock will be issued, contingent upon the occurrence of some future circumstance. For instance, shares might be issuable to shareholders of an acquired company, to certain key executives, or to others in the event a certain level of performance is achieved. Contingent performance may be a desired level of income, a target stock price, or some other measurable activity level. When calculating EPS, contingently issuable shares are considered to be outstanding in the computation of diluted EPS if shares are to be issued merely as a result of time passing, or if some target performance level already is being met (assumed to remain at existing levels until the end of the contingency period). For example, if shares will be issued at a future date if a certain level of income is achieved and that level of income or more was already earned this year, those additional shares are simply added to the denominator of the diluted EPS fraction. The shares should be included in both basic and diluted EPS if all conditions have actually been met so that there is no circumstance under which those shares would not be issued. In essence, these are no longer contingent shares.

Requirement 2

Sometimes, the effect of the exercise of options would be to increase, rather than decrease, EPS. These we refer to as “antidilutive” securities. Such options are ignored when calculating both basic and diluted EPS. For example, when we adjust shares for the effect of the options being exercised, we apply what’s called the “treasury stock” method. The number of shares assumed repurchased is fewer than the number of shares assumed sold any time the buy-back (average market) price is higher than the exercise price. In those cases, there will be a net increase in the number of shares so earnings per share will decline. This was the case for Alberto Culver’s options referred to in the note. On the other hand, if the exercise price is higher than the market price, to assume shares are sold at the exercise price and repurchased at the market price would mean buying back more shares than were sold. This would produce a net decrease in the number of shares. EPS would increase, not decrease, if we were to assume the exercise of stock options. These would have an antidilutive effect and would not be considered exercised. For that matter, a rational investor would not exercise options at an exercise price higher than the current market price anyway. We don’t include them because the intent of reporting diluted EPS is to report the extent to which EPS would be diluted, or reduced, if the potential common shares actually had become shares.
### Case 19–13 (concluded)

#### Requirement 3

Here is the presentation of basic and diluted earnings per share for 2011, 2010, and 2009 that Clorox reports in its 2011 annual report.

<table>
<thead>
<tr>
<th></th>
<th>2011</th>
<th>2010</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Basic</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Basic net earnings per share</td>
<td>$4.06 **</td>
<td>$4.28</td>
<td>$3.82</td>
</tr>
<tr>
<td>Continuing operations</td>
<td>$2.08 *</td>
<td>$3.73</td>
<td>$3.36</td>
</tr>
<tr>
<td>Discontinued operations</td>
<td>1.96</td>
<td>0.55</td>
<td>0.46</td>
</tr>
<tr>
<td><strong>Diluted</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diluted net earnings per share</td>
<td>$4.02 ±</td>
<td>$4.24</td>
<td>$3.79</td>
</tr>
<tr>
<td>Continuing operations</td>
<td>$2.07 ‡</td>
<td>$3.69</td>
<td>$3.33</td>
</tr>
<tr>
<td>Discontinued operations</td>
<td>1.95</td>
<td>0.55</td>
<td>0.46</td>
</tr>
</tbody>
</table>

* ($287,000 – 2,000) ÷ 136,699 = $2.08
** $555,000 ÷ 136,699 = $4.06
‡ ($287,000 – 2,000) ÷ 138,101 = $2.07
± $555,000 ÷ 138,101 = $4.02
Analysis Case 19–14

Requirement 1

In its simplest form, earnings per share is merely a firm’s net income divided by the number of shares outstanding throughout the year.

\[
\text{Earnings per share} = \frac{\text{Income available to common shareholders}}{\text{Weighted-average shares outstanding}}
\]

\[
= \frac{\$487}{181} = \$2.69
\]

Requirement 2

\[
\text{Price-earnings ratio} = \frac{\text{Market price per share}}{\text{Earnings per share}}
\]

\[
= \frac{\$47.00}{\$2.69} = 17.5 \text{ times}
\]

The ratio is a measure of the market's perception of the “quality” of a company’s earnings. It indicates the price multiple the capital market is willing to pay for the company’s earnings. In a way, this ratio reflects the market’s perceptions of the company’s growth potential, stability, and relative risk in that the ratio relates these performance measures to the external judgment of the marketplace concerning the value of the firm.

The calculation indicates that AGF’s share price represents $17.50 for every dollar of earnings. In that regard, it measures the “quality” of earnings in the sense that it represents the market’s expectation of future earnings as indicated by current earnings. We should be aware, though, that a ratio might be low, not because earnings expectations are low, but because of abnormally elevated current earnings, or, the ratio might be high, not because earnings expectations are high, but because the company’s current earnings are temporarily depressed.
### Case 19–14 (concluded)

#### Requirement 3

The dividend payout ratio expresses the percentage of earnings that is distributed to shareholders as dividends. To calculate the ratio for AGF with the information provided, we must estimate dividends from analysis of the retained earnings account:

<table>
<thead>
<tr>
<th>Retained Earnings</th>
<th>2,428</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>487</td>
</tr>
<tr>
<td>Net income</td>
<td></td>
</tr>
<tr>
<td>Dividends ?</td>
<td>2,730</td>
</tr>
</tbody>
</table>

Dividends apparently were $185,000,000. Dividends per share, then, would be $185 ÷ 181 = $1.02

\[
\text{Dividend payout ratio} = \frac{\text{Cash dividends per share}}{\text{Earnings per share}}
\]

\[
= \frac{1.02}{2.69} = 37.9\%
\]

AGF paid cash dividends of $1.02 cents per share during the most recent year, almost 38% of earnings. The ratio provides an indication of the firm’s reinvestment strategy. If the payout ratio is low, it suggests that the company retains a large portion of earnings for reinvestment purposes such as new facilities and current operations. Sometimes, though, the ratio just reflects managerial strategy regarding the mix of internal versus external financing. Investors who, for tax or other reasons, prefer current income over market price appreciation, or vice versa, are particularly interested in this ratio.
Research Case 19–15

The results students report will vary somewhat depending on the dates and times quotes were accessed. It is unlikely, though, that their relative comparisons or conclusions will differ.

The PE ratio is the market price per share divided by the earning per share. It measures the market's perception of the “quality” of a company’s earnings by indicating the price multiple the capital market is willing to pay for the company’s earnings. The ratio reflects the information provided by all financial information in that the market price reflects analysts’ perceptions of the company’s growth potential, stability, and relative risk. The price-earnings ratio relates these performance measures to the external judgment of the marketplace concerning the value of the firm. The ratio measures the “quality” of earnings in the sense that it represents the market’s expectation of future earnings as indicated by current earnings. Caution is called for in comparing price-earnings ratios. Historically, the ratio for both companies has been relatively high, reflecting growth expectations. The recent economic downturn affected the ratio for both companies.
Analysis Case 19–16

Requirement 1

The price-earnings ratio is simply the market price per share divided by the earnings per share. For Kellogg, the ratio is:

\[
\frac{51.08}{3.30} = 15.5
\]

It purports to measure the market's perception of the “quality” of a company’s earnings by indicating the price multiple the securities market is willing to pay for the company’s earnings. The P/E ratio reflects analysts’ perceptions of the company’s growth potential, stability, and relative risk by relating these performance measures to the external judgment of the marketplace in regard to the value of the company.

Care is needed when evaluating price-earnings ratios. Like other ratios, it is best evaluated in the context of P/E ratios of earlier periods and other, similar companies. For example, the P/E ratio of General Mills, Kellogg’s prime competitor, was 14.7 at the same time. Neither is particularly high or low relative to the average P/E ratio for all companies at the time, which was 13.9.

Requirement 2

The dividend payout ratio expresses the percentage of earnings that is distributed to shareholders as dividends. The ratio is calculated by dividing dividends per common share by the earnings per share. For Kellogg’s most recent 12 months, the ratio is:

\[
\frac{.43 \times 4}{3.30} = 52\%
\]

Relative to the average company, this payout percentage is quite high. It is the same as General Mills, Kellogg’s prime competitor. General Mills’ payout ratio also was 43% at the same time. Historically, both companies and the industry in general have relatively high dividend payouts. This ratio provides an indication of a firm’s reinvestment strategy. A low payout percentage suggests that a company is retaining a large portion of earnings for reinvestment in new projects. Low ratios often are found in growth industries. High payouts, like those of General Mills and Kellogg, often are found in mature industries. Sometimes, the ratio is just an indication of management strategy related to the mix of internal versus external financing. A high ratio is preferred by investors who, for tax or other reasons, prefer current income to market price appreciation.
Research Case 19–17

Requirement 1

The appropriate accounting treatment for the situation is specified in FASB ASC 718–10–35: “Compensation–Stock Compensation–Overall.” Section 718–10–35–15 states:

Change in Classification Due to Change in Probable Settlement Outcome

35-15 An option or similar instrument that is classified as equity, but subsequently becomes a liability because the contingent cash settlement event is probable of occurring, shall be accounted for similar to a modification from an equity to liability award. That is, on the date the contingent event becomes probable of occurring (and therefore the award must be recognized as a liability), the entity recognizes a share-based liability equal to the portion of the award attributed to past service (which reflects any provision for acceleration of vesting) multiplied by the award's fair value on that date. To the extent the liability equals or is less than the amount previously recognized in equity, the offsetting debit is a charge to equity. To the extent that the liability exceeds the amount previously recognized in equity, the excess is recognized as compensation cost. The total recognized compensation cost for an award with a contingent cash settlement feature shall at least equal the fair value of the award at the grant date….

Requirement 2

National Paper should record a liability for the portion of the award attributed to past service (2/5) multiplied by the award's fair value ($8 million) on the date cash payment becomes probable:

\[
\begin{align*}
\text{Paid-in capital—SAR plan} & \times \frac{2}{5} = 2.0 \\
\text{Compensation expense (difference)} & = 1.2 \\
\text{Liability—SAR plan} & \times \frac{2}{5} = 3.2
\end{align*}
\]

Previously recorded paid-in capital (appropriate for an equity award) is removed, with the difference recorded as compensation.
Air France–KLM Case

Requirement 1

Note 28.4 indicates that AF reported €1 million in its income statement for its stock options in 2011. AF’s share options are cliff-vesting, such that one-third of the options vest at grant date with a further one-third after one and two years, respectively. When options have graded-vesting, U.S. GAAP permits companies to account for each vesting amount separately, as if they were separate awards, but also allows companies the option to account for the entire award on a straight-line basis over the entire vesting period. Either way, the company must recognize at least the amount of the award that has vested by that date.

Under IFRS, the straight-line method is not permitted. Also, there’s no requirement that the company must recognize at least the amount of the award that has vested by each reporting date.

The options also are performance-based, which means that under either U.S. GAAP or IFRS the amount expensed depends on whether it’s “probable” that the performance target will be met. Remember, though, that probable means something different under U.S. GAAP and IFRS. Under U.S. GAAP, probable means the same as it did in Chapter 13 when we were estimating the likelihood that payment would be made for a loss contingency and elsewhere when making accounting estimates. Probable is a matter of professional judgment (often 70–75%). Under IFRS, though, probable means more likely than not, also as discussed in Chapter 13.

Requirement 2

AF reported basic earnings per share of €2,08 and diluted earnings per share of €1,76 in its income statement for the year ended March 31, 2011. If AF used U.S. GAAP, it would have reported EPS using the same basic/diluted classification. The earnings per share requirements of U.S. GAAP, FASB ASC 260: Earnings per Share, are a result of the FASB’s cooperation with the IASB to narrow the differences between IFRS and U.S. GAAP. A few differences remain. The differences that remain are the result of differences in the application of the treasury stock method, the treatment of contracts that may be settled in shares or cash, and contingently issuable shares.