

- 1 Find the most general antiderivative of $f(x) = 6x^2 - 4x + 2$.

Problem**code:**

stet.

04.10.01

- 2 Find the most general antiderivative of $f(x) = 7x^{2/5} - 8x^{3/5}$. Check your answer by differentiation.

a. $F(x) = 7x^{7/5} - 8x^{8/5} + C$

d. $F(x) = \frac{25}{2}x^{7/5} - \frac{25}{3}x^{8/5} + C$

b. $F(x) = \frac{14}{5}x^{7/5} - \frac{24}{5}x^{8/5} + C$

e. $F(x) = 5x^{7/5} - 8x^{8/5} + C$

c. $F(x) = 5x^{7/5} - 5x^{8/5} + C$

Problem**code:** stet.

04.10.05m

- 3 Find the most general antiderivative of the function on the interval $\left(-\frac{\pi}{2}, \frac{\pi}{2}\right)$.

$$f(x) = 7e^x + 6\sec^2 x$$

Problem**code:**

stet.

04.10.12

- 4 Find f if $f'(t) = 4 \cos t + \sec^2 t$ for $-\frac{\pi}{2} < t < \frac{\pi}{2}$ and $f\left(\frac{\pi}{3}\right) = 7$.

Problem**code:**

stet.

04.10.29

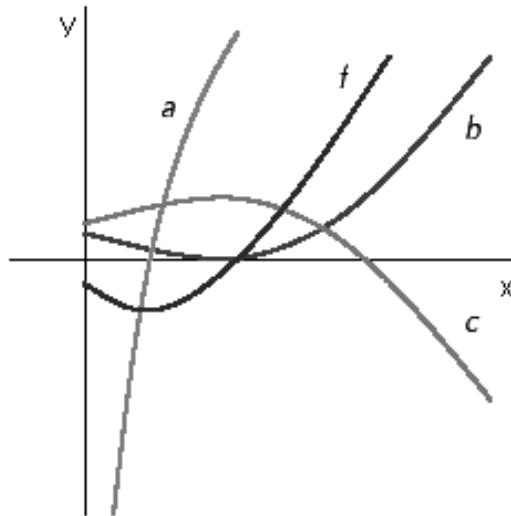
- 5 Find f if $f''(x) = 4 - 30x$, $f(3) = 9$, and $f(0) = 9$.

Problem**code:**

stet.

04.10.37

- 6 The graph of a function f is shown. Which graph is an antiderivative of f ?



_____ (?)

Problem**code:**

stet.

04.10.45

- 7 A particle has velocity $v(t) = \sin t - \cos t$ and its initial position is $s(0) = 2$. Find the position function of the particle.

Problem**code:**

stet.

04.10.59

- 8 A high-speed bullet train accelerates and decelerates at the rate of 4 ft/s^2 . Its maximum cruising speed is 90 mi/h. If the trip from one station to the next takes 23 minutes, how far apart are the stations?

a. 30.65 mi

b. 39.725 mi

c. 36.7 mi

d. 33.675 mi

e. 27.625 mi

Problem**code:** stet.

04.10.79dm

ANSWER KEY

Homework 4.10 Math 19A Fall 2006, Bauerle

1. $F(x) = 2x^3 - 2x^2 + 2x + C$

2. c

3. $F(x) = 7e^x + 6\tan(x) + C$

4. $f(t) = 4\sin(t) + \tan(t) + 7 - 3\sqrt{3}$

5. $f(x) = 2x^2 - 5x^3 + 39x + 9$

6. b

7. $s(t) = -\cos(t) - \sin(t) + 3$

8. d