

1. (25 Points) Write a complete Python program that opens a file called 'myfile', reads the entire contents of the file into a string `s`, determines the number of words in `myfile` and prints that number on a line, then prints out all words in `myfile` in alphabetical order, each word on a separate line.

Solution:

```
f = open('myfile', 'r')
s = f.read()
L = s.split()
print(len(L))
L.sort()
for x in L:
    print(x)
# end for
```

2. (25 Points) Write a Python function `mult(u, v)` that takes two lists `u` and `v` (with `len(u) == len(v)`) as input, and returns a new list (of the same length) whose elements are the products of the corresponding elements in `u` and `v`. Thus if `u = [1, 2, 3]` and `v = [4, 5, 6]` then `mult(u, v)` will return the list `[4, 10, 18]`. If `u` and `v` have different lengths, your function will return `None`.

If your function is written correctly, the following main program

```
a = [1, 2, 3]
b = [4, 5, 6]
c = ['one', 'two', 'three']
d = [1, 2, 3, 4]

print(mult(a, b))
print(mult(a, c))
print(mult(a, d))
```

will produce the output

```
[4, 10, 18]
['one', 'twotwo', 'threethreethree']
None
```

Solution:

```
def mult(u, v):
    n = len(u)
    if len(v) == n:
        w = []
        for i in range(n):
            w.append(u[i]*v[i])
        # end for
        return w
    # end if
# end mult()
```