

### Practice Problem 4.1

What does the following program print?

```
# prob4.1.py
def mystery1(a):
    if a <= 1:
        return a
    else:
        b = a + mystery1(a - 1)
        return b

print( mystery1( 10 ) )
```

**10 + 9 + 8 + 7 + 6 + 5 + 4 + 3 + 2 + 1 = 55**

### Practice Problem 4.2

What does the following program print?

```
# prob4.2.py
def mystery2(m, n):
    if m % n == 0:
        return n
    else:
        return mystery2( n, m % n )

print( mystery2( 468, 24 ) )
```

**12**

This program implements a well-known mathematical algorithm. Can you determine what it computes about the two arguments m and n?

**Euclid's Algorithm, Greatest Common Divisor (GCD)**