

CSc 110 Midterm 1: Exam Key

1. Expressions

Expression

13 + 2 * 5 // 3
2.5 * 4 * 3 // 12 + 1.5
85 % (6 + 4) % 10 - 17 % 3
2 + 3 > 3 + 4 and 1 < 2 * 3
482 // 10 // 5 // 2.0 > 2 or False

Value

16
3.5
3
False
True

2. Parameter Mystery

a two and a queen beats a king
a queen and a queen beats a b
a two and a king beats a five
a king and a two beats a queen
a queen and a two beats a five

3. If/Else Simulation

Method Call

mystery(4, 15)
mystery(7, 17)
mystery(12, 5)
mystery(16, 8)

Value Returned

15 + 10
27 + 10
15 + 10
28 + 2

4. Programming (one solution shown)

```
def num_unique(a,b,c):
    if (a == b and b == c):
        return 1
    if (a != b and b != c and c != a):
        return 3
    return 2
```

5. Programming (one solution shown)

```
def two_rectangles(width, height):
    scale = int(input("Scale = "))
    for line in range(1, height + 1):
        for i in range(1,width + 1):
            print("*", end="")
        print()
    for line in range(1, height*scale + 1):
        for i in range(1, width + 1):
            print(" ", end="")
        for i in range(1,width*scale + 1):
            print("*", end="")
        print()
```

6. Programming (one solution shown)

```
def print_range(low,high):
    if (high < low):
        print("[ ] = 0")
    else:
        sum = low
        print("[", str(low), end="")
        for i in range(low + 1, high + 1):
            print(", " + str(i), end="")
            sum = sum + i
        print("] = " + str(sum))
```