

CS 115 Sample Midterm Exam #2 Key

1. Variable Mystery

x = 3

y = 11

z = 18.0

2. Expressions

2

9

6.6

8.0

14.0

-3.5

3. If/Else Simulation

4 to 2

3 to 8

5 to 3

7 to 12

3. While Loop Mystery

0 0

2 82

2 64

3 804

5. Boolean Expressions

False

True

True

False

False

False
False
True
False
True

6. Programming

```
def random_shape():  
    panel = drawing_panel(500, 500)  
    color = input("color? ")  
    x = int(input("x? "))  
    y = int(input("y? "))  
    width = randint(50, 100)  
    circle = randint(0, 1)  
    if circle == 0:  
        panel.fill_oval(x, y, width, 2 * width, color)  
        panel.draw_oval(x, y, width, 2 * width, "black")  
    else:  
        panel.fill_rect(x, y, width, 2 * width, color)  
        panel.draw_rect(x, y, width, 2 * width, "black")
```

7. Programming

```
def koala():  
    panel = drawing_panel(500, 500)  
    x = randint(0, 380)  
    y = randint(0, 390)  
    panel.fill_oval(x + 10, y + 10, 100, 100, "gray") # head  
    panel.fill_oval(x, y, 50, 60, "gray") # left ear  
    panel.fill_oval(x + 70, y, 50, 60, "gray") # right ear  
  
    panel.fill_oval(x + 30, y + 50, 10, 10, "black") # left eye  
    panel.fill_oval(x + 80, y + 50, 10, 10, "black") # right eye  
    panel.fill_oval(x + 50, y + 60, 20, 40, "black") # nose
```

8. Programming (three solutions shown)

```
def month_apart():  
    m1 = int(input("First month? "))  
    d1 = int(input("First day? "))  
    m2 = int(input("Second month? "))  
    d2 = int(input("Second day? "))  
  
    if m1 == m2:  
        print("too soon")  
    elif m1 <= m2 - 2:  
        print("month apart")  
    elif m1 >= m2 + 2:  
        print("month apart")  
    elif m1 == m2 - 1:  
        if d1 <= d2:  
            print("month apart")  
        else:  
            print("Too soon")  
    elif m1 == m2 + 1:  
        if d1 >= d2:  
            print("month apart")
```

```
    else:
        print("too soon")
else:
    print("too soon")
```

```
def month_apart():
    m1 = int(input("First month? "))
    d1 = int(input("First day? "))
    m2 = int(input("Second month? "))
    d2 = int(input("Second day? "))

    if m1 < m2 - 1 or m1 > m2 + 1:
        print("month apart")
    elif m1 == m2 - 1 and d1 <= d2:
        print("month apart")
    elif m1 == m2 + 1 and d1 >= d2:
        print("month apart")
    else:
        print("too soon")
```

```
def month_apart():
    m1 = int(input("First month? "))
    d1 = int(input("First day? "))
    m2 = int(input("Second month? "))
    d2 = int(input("Second day? "))

    if (m2 - m1 > 1) or (m1 - m2 > 1) or (m2 - m1 == 1 and d1 <= d2) or
        (m1 - m2 == 1 and d1 >= d2):
        print("month apart")
    else:
        print("too soon")
```