

NAME: _____ CS21 Quiz 3, Swarthmore College Fall
2015

1. For each of the following expressions, show the value and describe the type of the result. If the type is a list, describe the type of items in the list, e.g., a list of strings. If the type is an object, list the class to which the object belongs, e.g., a Point object. You only need to list the type, not the value for items marked with *****

assume the following assignments:

```
x = 100
y = 200
p1 = Point(x,y)
p2 = Point(x+10,y)
p3 = Line(p1, p2)
txt = "Halloween"
```

VALUE	TYPE
-----	-----

y == 2*x

p1 *****

[x, y]

p1.getY() < 300

len([p1, p2])

p3 *****

"all" in txt

len("txt")

2. Step through the execution of the following program and show the output of the print statements.

```
x = 3
y = 2
z = 1
```

OUTPUT

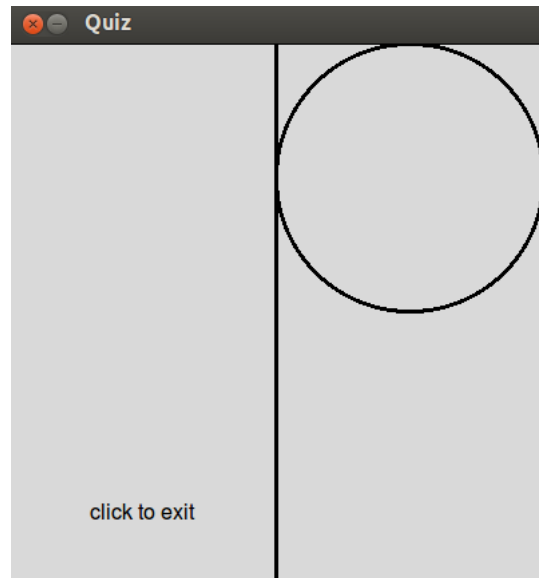
```
-----
print (" x y z")
while x < 8:
    if x > y:
        z = y + 1
        y = 2*y
    else:
        y = z - 1
        x = x + z
    print("%2d %2d %2d" % (x, y, z))
```

3. Write a program that asks a user if they prefer puppies or ponies. The user should type either a lowercase 'a' for puppies or lowercase 'b' for ponies. If the user types an invalid response, repeatedly prompt them until the response is valid. After getting a valid response, print out the user's choice of puppies or ponies.

```
$python choices.py
```

```
Do you prefer
  a) puppies
  b) ponies?
Answer: c
Please choose 'a' or 'b'
Answer: neither
Please choose 'a' or 'b'
Answer: both
Please choose 'a' or 'b'
Answer: a
```

```
You picked puppies
```



4. Using the graphics library, complete the program started below that will draw a picture of a circle and a line as shown above. Your program should wait for a mouse click before closing the graphics window. Your program does not need to include comments.

```
def main():  
    win=GraphWin("Quiz3", 400, 400)  
    text=Text(Point(100,350), "click to exit")
```