Handout 10

Classes terminology

Question 1. Consider the following class:

```
 1 import math
 2 from point import *
 3
 4 class Circle:
 5
 6     def __init__(self, center, radius):
 7         self.center = center
 8         self.radius = radius
 9
10     def getRadius(self):
11         return self.radius
12
13     def getCenter(self):
14         return self.center
15
16     def setRadius(self, radius):
17         self.radius = radius
18
19     def setCenter(self, center):
20         self.center = center
21
22     def __str__(self):
23         return f"center: {self.center} radius: {self.radius}"
24
25     def computeArea(self):
26         return self.radius * self.radius * math.pi
27
28     def computeCircumference(self):
29         return 2.0 * math.pi * self.radius
30
31 if __name__ == "__main__":
32
33     pos = Point(50,50)
34     circle = Circle(pos, 100)
35
36     print("Create circle:", circle)
37     print("Circle area:", circle.computeArea())
38     print("Circle circumference:", circle.computeCircumference())
```

(a). Which method is the constructor of Circle?

(b). What are the member variables of Circle?

(c). Which methods in Circle are "getters"?

(d). Which methods in Circle are "setters"?

(e). What variables are in scope in the method "setRadius" on line 16?

(f). On line 33, what function/method is called?

(g). On line 34, what function/method is called?

(h). On line 36, what function/method is called?

(i). On line 37, what function/method is called?

(j). On line 33, what is the data type of "pos"?

(k). On line 23, what is the data type of the value returned?

(l). On line 26, what is the data type of the value returned?