

Name: _____ Section: 1 (7th-8th) or 2 (9th-10th)

Do the reading assigned below and answer these questions either while reading or afterwards (your choice). **Not sure of an answer?** Ask your instructor to explain *at the beginning of the next class session*. You can then fill in your answer, still for full credit. (But no fair doing that unless you attempted the question first.)

Reading for this quiz: Chapter 4 of your textbook (Zelle)

1. An object has a _____ and a _____.
2. Consider the Zellegraphics **Point** class. Assume your program has the statement (for all the following questions):

```
import zellegraphics as zg
```

- a. Write a statement that constructs a **Point** object at (60, 30) and assigns the variable **p1** to refer to the constructed object.
- b. Write a statement that causes the above variable **p1** to move by 10 in the y direction.
- c. Write a statement that sets the variable **s** to the sum of two of **p1**'s instance variables: the one called **x** and the one called **y**.

3. Consider the code snippet shown to the right.

- a. How many Zellegraphics objects are constructed by that snippet (when it runs)?

- b. How many circles will be displayed on the screen at any given instant in time?

- c. Over the entire run of the snippet, how many differently-displayed circles will be drawn?

(This questions is pretty ambiguous, no problem if you don't get it.)

- d. How many objects (of any type) are constructed by the snippet (when it runs)? (Actually, you can't answer this question, but think a bit about it and we'll discuss it in class.) _____

```
radius = 30
point = zg.Point(50, 40)
circle = zg.Circle(point, radius)
window = zg.GraphWin('bob', 600, 400)

for k in range(100):
    circle.draw(window)
    circle.move(10, 0)
    time.sleep(1.0)
```

If you have other questions about Chapter 4, ask them at your next class session!