Computer Science 1	Exercises 08.06-09	Date:
Name:		Period:

Questions 1 and 2 refer to program `RepetitionWithGraphics04.py`

1. Why are all of the lines vertical?

2. Imagine you change both of the **20**s in this program to **10**s.
   How will the output of this new program be different?

Questions 3 and 4 refer to program `RepetitionWithGraphics05.py`

3. Why are all of the lines horizontal?

4. Imagine you change both of the **20**s in this program to **40**s.
   How will the output of this new program be different?

5. Look at program **RepetitionWithGraphics06.py**. Why are these diagonal lines parallel?

6. Look at program **RepetitionWithGraphics07.py**. Why do all of the lines start at the same point?

7. Look at program **RepetitionWithGraphics08.py**.
   Rewrite line #20 so the oval grows *vertically* instead of *horizontally*.

8. How many different colors can be created with Python?

9. What are the 3 primary colors on a computer?

10. Suppose you want to use the color **Metallic Gold** in your program. You research and find the color numbers you need are *red*-**212**, *green*-**175** and *blue*-**55**. Write the necessary Python command to accomplish this.

11. What can give a 2-D image a 3-D appearance?

12. Python has a built-in _____ library with a _____ function that generates random integers.

13. Look at program **RandomNumbers01.py** and both of its outputs. Why are the 2 outputs not the same?

14. Compare programs **RandomNumbers03.py** and **RandomNumbers04.py**. The former program does not properly simulate the rolling of dice. How does the latter program fix this issue?

15. Look at program **RandomGraphics01.py** and all of its outputs. In all 3 outputs, the black lines are identical, but the red line is different. Why is this?

16. Look at program **RandomGraphics02.py** and all of its outputs. In all 3 outputs, the location and size are identical for the black circle, but for the red circle both are different. Why is this?

Questions 17 – 21 refer to program `RandomGraphics03.py` and Figure 8.42.

17. Explain how you would change the program to make its output look like Figure 8.42**b**.

18. Explain how you would change the program to make its output look like Figure 8.42**c**.

19. Explain how you would change the program to make its output look like Figure 8.42**d**.

20. Explain how you would change the program to make its output look like Figure 8.42**e**.

21. Explain how you would change the program to make its output look like Figure 8.42**f**.

22. Explain how a *random color* can be created.

23. Look at programs **RandomGraphics04.py** and **RandomGraphics05.py**. Both programs draw random circles. Why are all of the circles in **RandomGraphics04.py** the same size while **RandomGraphics05.py** draws circles of many different sizes?

24. Look at programs **RandomGraphics06.py** and **RandomGraphics07.py**. Both programs draw random regular polygons. Why are all of the polygons in **RandomGraphics06.py** squares while **RandomGraphics07.py** draws triangles, squares, pentagons, hexagons, heptagons, octagons, nonagons and decagons?