2-Unit 2 L 1– Worksheet Graphics Draw Commands

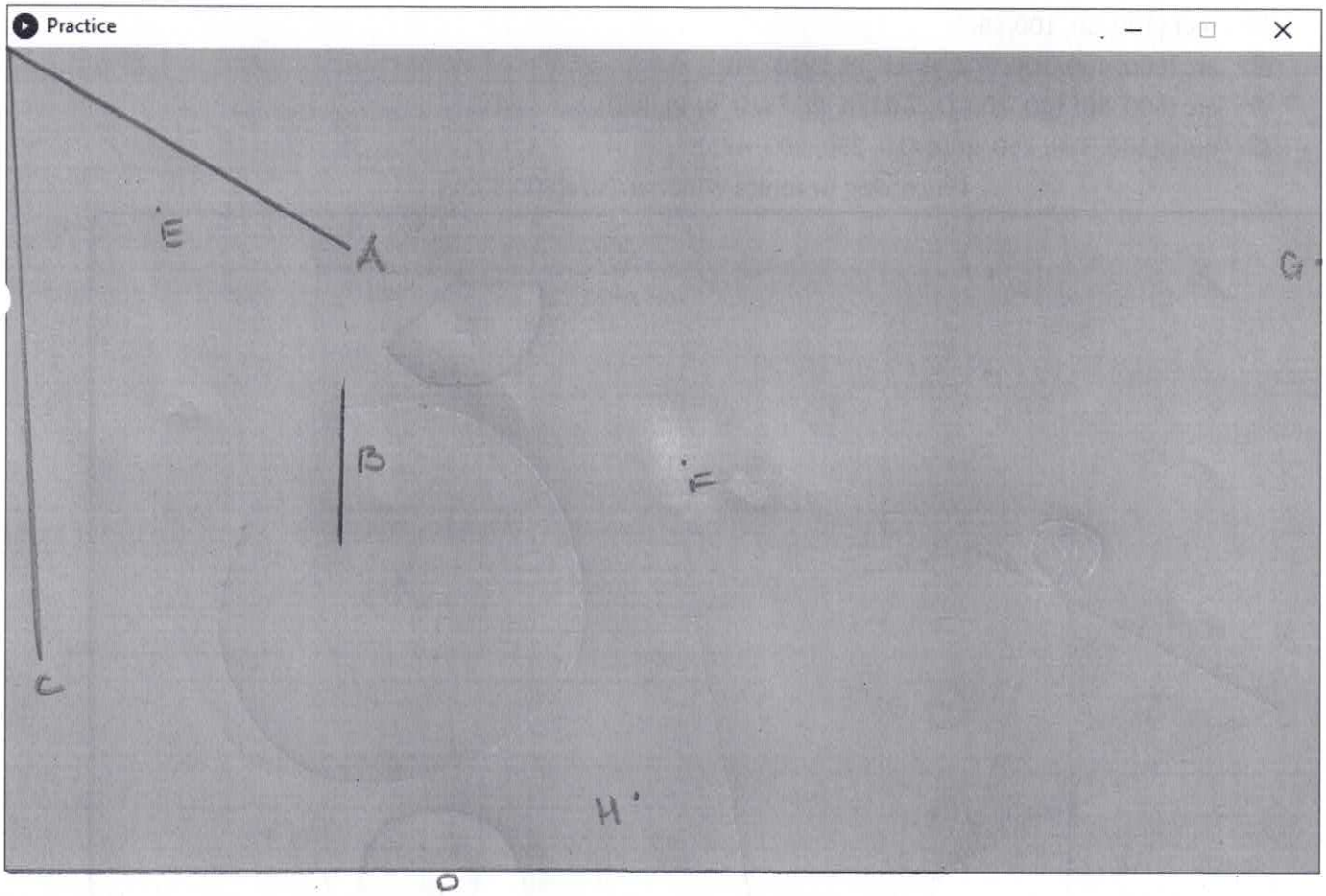
Time: 1 period

Name: Jessica C. Date: Monday, December 7, 2020

1. Label each corner of the output screen with its (x, y) coordinates. Please note: the work area shown corresponds to 800 by 500 graphics window.

2. **Draw**, in the box below, each line exactly as it would appear in Processing's graphics window and label each one as A, B, C, and D next to the corresponding line.

A. line (0, 0, 200, 100);
B. line (200, 300, 200, 200);
C. line (0, 0, 20, 400);
D. line (0, 500, 500, 500);
E. point (110,100);
F. point(400,250);
G. point(799.125);
H. point(391,455);



3. **Answer the following questions.**

1. What is the distance in pixels from the origin (0, 0) to the top right corner of the output screen?
800

2. What is the distance to the bottom right corner of the output screen?
From the origin it's 1000 pixels, from the top right it's 500 pixels

3. What are the (x, y) coordinates of the top right corner of the output screen?
(800, 0)

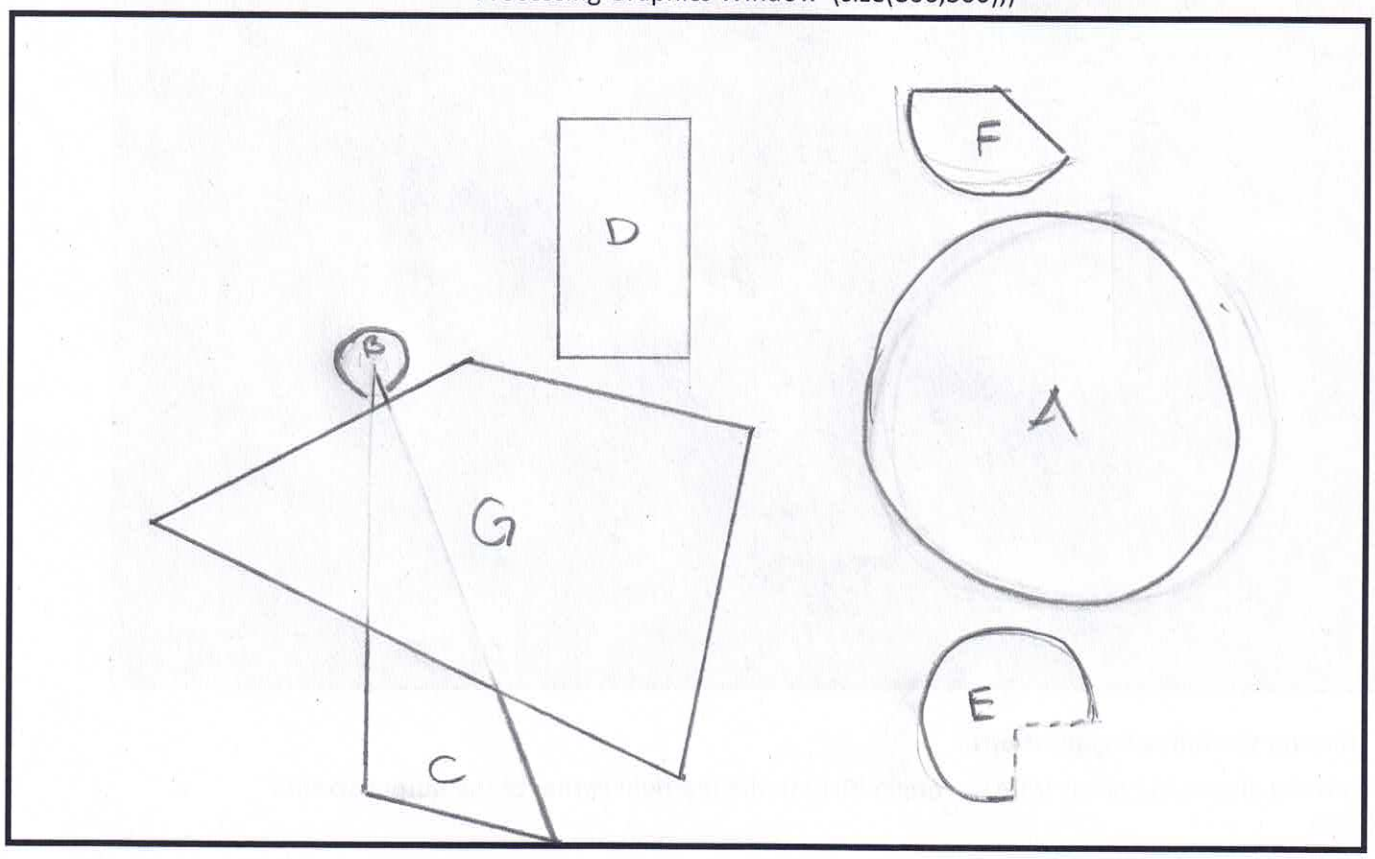
4. In what units does the computer measure the output screen?
pixels

5. What happens if you 'forget' to include the *size(800, 500);* command?
it will be the default size, which is 100x100 pixels

6. What happens if you forget the semi-colon at the end of the *size* or one of the *line* commands?
There will be a syntax error

4. **Exercise: Draw** each object exactly as it appears in the output box below and label each one as A, B, C, and D etc. next to each one.
   - A. ellipse(618, 218, 200, 200); // Blue circle
   - B. ellipse (200, 200, 50, 50);
   - C. triangle(200, 200, 300, 500, 200, 475);
   - D. rect (300, 50, 100,150);
   - E. arc (600, 400, 100, 100, HALF_PI, TWO_PI);
   - F. arc (600, 50, 100, 100, QUARTER_PI, TWO_PI-PI, PIE);
   - G. quad(100, 300, 260, 200, 450, 250, 400, 475);

Processing Graphics Window (size(800,500);)



5. **For each of the following, explain the arguments needed in the command.**
(Note : in CENTER mode)

ellipse (x, y, c, v);

What is x? x-coordinate for the centre

What is y? y-coordinate for the centre

What is c? width of the ellipse at its widest part

What is v? height of the ellipse at its longest point.

Where is the centre? (x, y) or where it's half of both c and v

rect (x, y, c, v);

What is x? x-coordinate for the centre

What is y? y-coordinate for the centre.

What is c? width of the rectangle

What is v? height of the rectangle

Where is the centre? (x, y) or where c and v are both exactly half long to reach there.

What therefore is the (x, y) coordinate pair pointing to? Centre.

arc (x, y, c, v, sa, ea);

What is x? x-coordinate of the centre.

What is y? y-coordinate of the centre.

What is c? width of the circle its based off

What is v? height of the circle its based off.

What is sa? start radian

What is ea? end radian

Where is the centre? (x, y) or half the lengths of c and v.

quad(a, b, c, d, e, f, g ,h);

What does each pair of letters represent?

A coordinate for a vertex going clockwise.

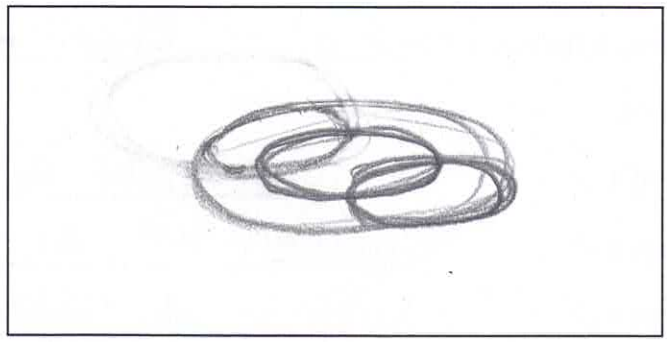
6. Variations of the ellipse() function.

The coordinates used in the four ellipse() functions below are identical, however the mode is different. A) Do you think the four ellipses will be identical in size and drawn on top of each other? No

Explain your answer: one example is corners mode, where the last two numbers aren't the size, but the bottom right corner. There are differences between the modes in other ways too.

B) In the space provided draw your idea of what the code below might produce. No exact coordinates are necessary.

ellipseMode(RADIUS);
ellipse(400, 250, 200, 100);
ellipseMode(CENTER);
ellipse(400, 250, 200, 100);
ellipseMode(CORNER);
ellipse(400, 250, 200, 100);
ellipseMode(CORNERS);
ellipse(400, 250, 200, 100);



7. Variations of the rect () functions.

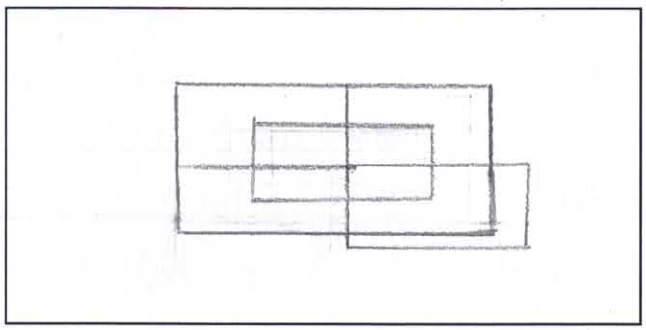
The coordinates used in the four rect() functions below are identical, however the mode is different.

A) Do you think the four rectangles will be identical in size and drawn on top of each other? No

Explain your answer: Like before, the parameters may mean different things, like how the coordinates for corner are for the top left corner while they're the middle for centre.

B) In the space provided draw your idea of what you think he code will produce. No exact coordinates are necessary.

rectMode(RADIUS);
rect(400, 250, 200, 100);
rectMode(CENTER);
rect(400, 250, 200, 100);
rectMode(CORNER);
rect(400, 250, 200, 100);
rectMode(CORNERS);
rect(400, 250, 200, 100);



1. Complete the worksheet individually. NO COMPUTERS!
2. Submit to the teacher for a signature.
3. Only when signature is obtained type the code for all exercises in Processing. Run it.
4. Correct all errors you have made on the worksheet and provide to the teacher for a second signature.

teacher signature_____ teacher signature_____