

Name: _____

Date: _____

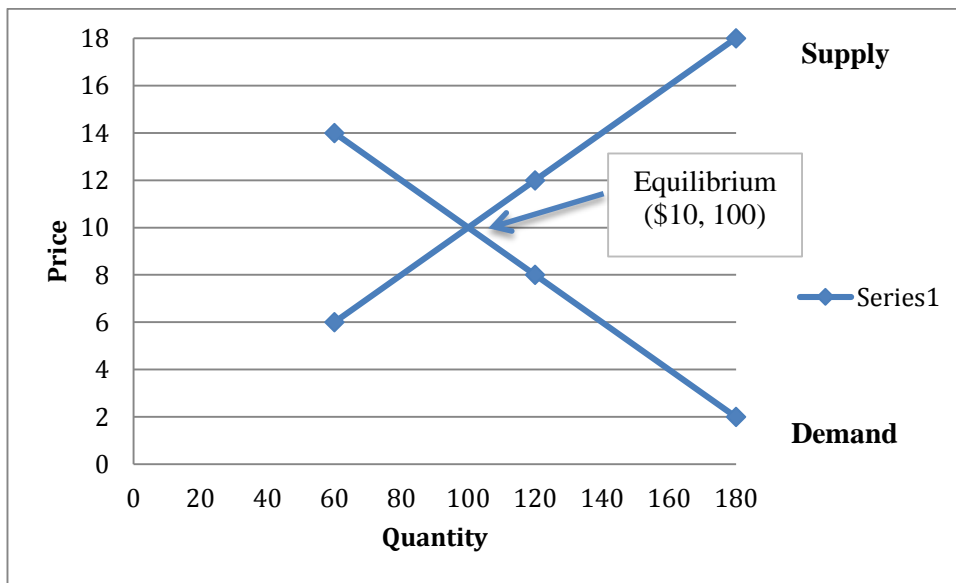
Activity 4 - Assessment

Use the data below to graph the supply and demand curves, find the equations of the lines, and use the system of equations to confirm the equilibrium point. Be sure to label the graph clearly.

Price (y axis)	Quantity Demanded (x axis)
14	60
8	120
2	180

Price (y axis)	Quantity Supplied (x axis)
6	60
12	120
18	180

Answer:



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- a. Find the slope of the demand curve using two points from the demand function table:

$$M = \frac{y_2 - y_1}{x_2 - x_1} \quad M = \frac{8 - 14}{120 - 60} = -\frac{6}{60} = -.1$$

- b. Plug the slope (-.1) and one of the ordered pairs from the demand function table into $y = mx + b$ and solve for b

$$8 = -.1(120) + b \quad 8 = -12 + b \quad b = 20$$

- c. Enter the slope and y intercept into the slope intercept form of the linear equation

$$\text{demand (x)} \quad y = -.1x + 20$$

- d. Find the slope of the supply curve using two points from the supply function table:

$$M = \frac{y_2 - y_1}{x_2 - x_1} \quad M = \frac{12 - 6}{120 - 60} = \frac{6}{60} = \frac{1}{10} = .1$$

- e. Plug the slope (.1) and one of the ordered pairs from the supply function table into $y = mx + b$ and solve for b

$$12 = .1(120) + b \quad 12 = 12 + b \quad b = 0$$

- f. Enter the slope and the y intercept into the slope intercept form of the linear equation

$$\text{Supply (x)} \quad y = .1x$$

- g. Set the equations equal to each other and solve for x to obtain the quantity.

$$-.1x + 20 = .1x \quad 20 = .2x \quad x = 100$$

- h. Plug the result $x = 100$ back into either equation to obtain the value for y , which equals the equilibrium price.

$$y = .1x \quad y = .1(100) \quad y = 10$$

- i. The intersection and equilibrium point is (10 price, 100 quantity)