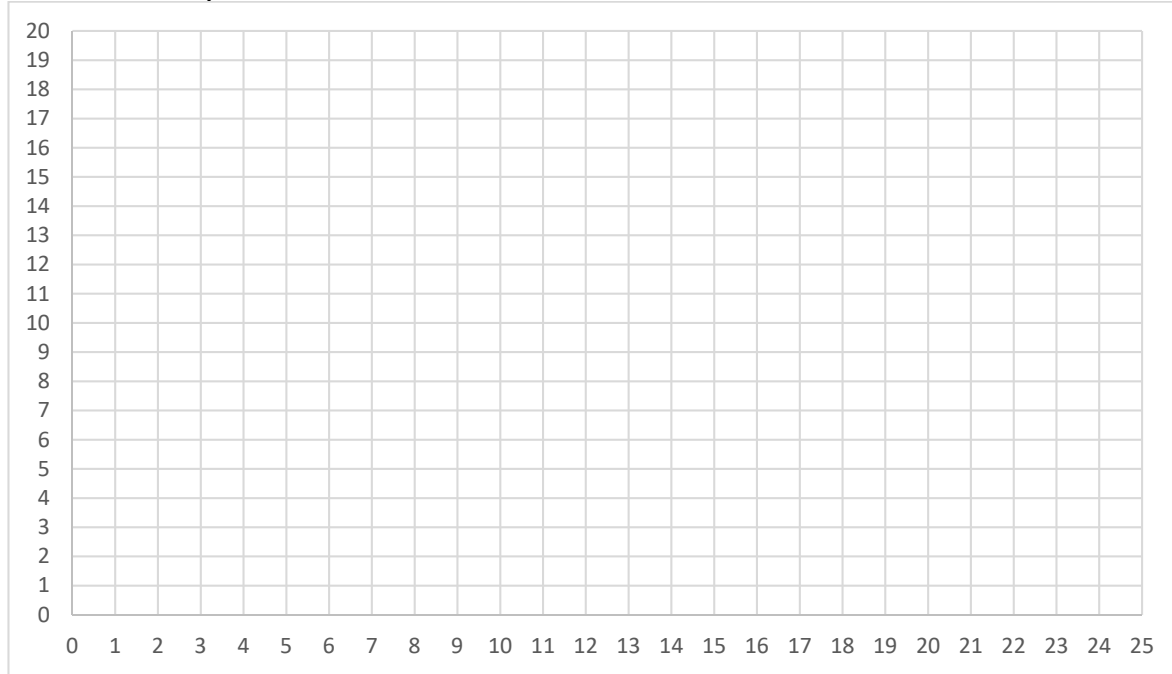


Review: What is the equation for a line? What is a slope?

Equation 1: $y=19-2x$

Equation 2: $y=2+x$

Problem 1: Graph these two lines.



Problem 2a: If $x=4$, what is y in equation 1?

Problem 2b: If $x=4$, what is y in equation 2?

Problem 2c: Draw a vertical line at $x=4$. What is the distance (on the y axis) between the Equation 1 line and the Equation 2 line at $x=4$?

Problem 3a: If $y=14$, what is x in equation 1?

Problem 3b: If $y=14$, what is x in equation 2?

Problem 3c: Draw a horizontal line at $y=14$. What is the distance (on the x axis) between the Equation 1 line and the Equation 2 line at $y=14$?

Problem 4: Look at the graph. At what x and y do these lines cross (approximately)?

Problem 5: Solve these two equations for the two unknowns where they cross.

Problem 6: In Equation 1: If x goes from 4 to 8, y goes from _____ to _____.

Two formulas for percent change:

“Normal”: $\frac{newx-oldx}{oldx} * 100$ or $\frac{\Delta x}{old x} * 100$ “Midpoint”: $\frac{newx-oldx}{average x} * 100$ or $\frac{\Delta x}{average x} * 100$

By what % did x increase? Using Normal Method: _____ Using Midpoint Method: _____

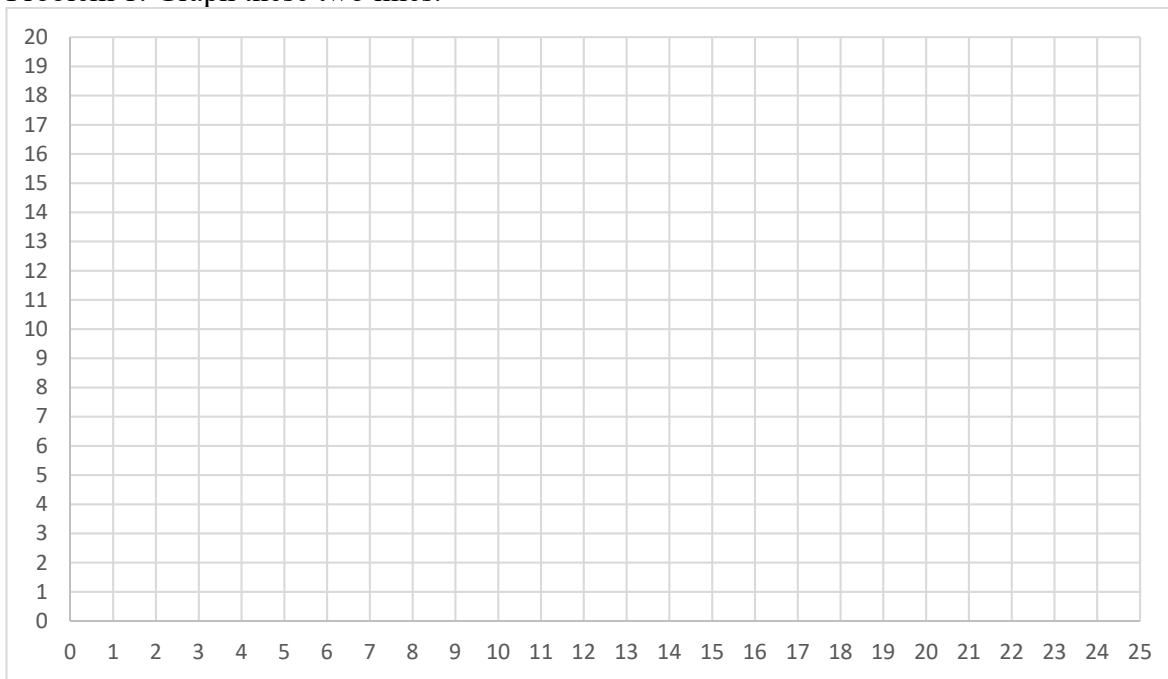
By what % did y increase? Using Normal Method: _____ Using Midpoint Method: _____

Introductory Microeconomics Graphing and algebra review Set Two: Practice

Equation 1: $y=16-0.5x$ or $y=16-\frac{1}{2}x$

Equation 2: $y=3.5+2x$

Problem 1: Graph these two lines.



Problem 2a: If $x=4$, what is y in equation 1?

Problem 2b: If $x=4$, what is y in equation 2?

Problem 2c: Draw a vertical line at $x=4$. What is the distance (on the y axis) between the Equation 1 line and the Equation 2 line at $x=4$?

Problem 3a: If $y=10$, what is x in equation 1?

Problem 3b: If $y=10$, what is x in equation 2?

Problem 3c: Draw a horizontal line at $y=14$. What is the distance (on the x axis) between the Equation 1 line and the Equation 2 line at $y=14$?

Problem 4: Look at the graph. At what x and y do these lines cross (approximately)?

Problem 5: Solve these two equations for the two unknowns where they cross. Show your work.

Problem 6: In Equation 1: If x goes from 5 to 10, y goes from ____ to ____.

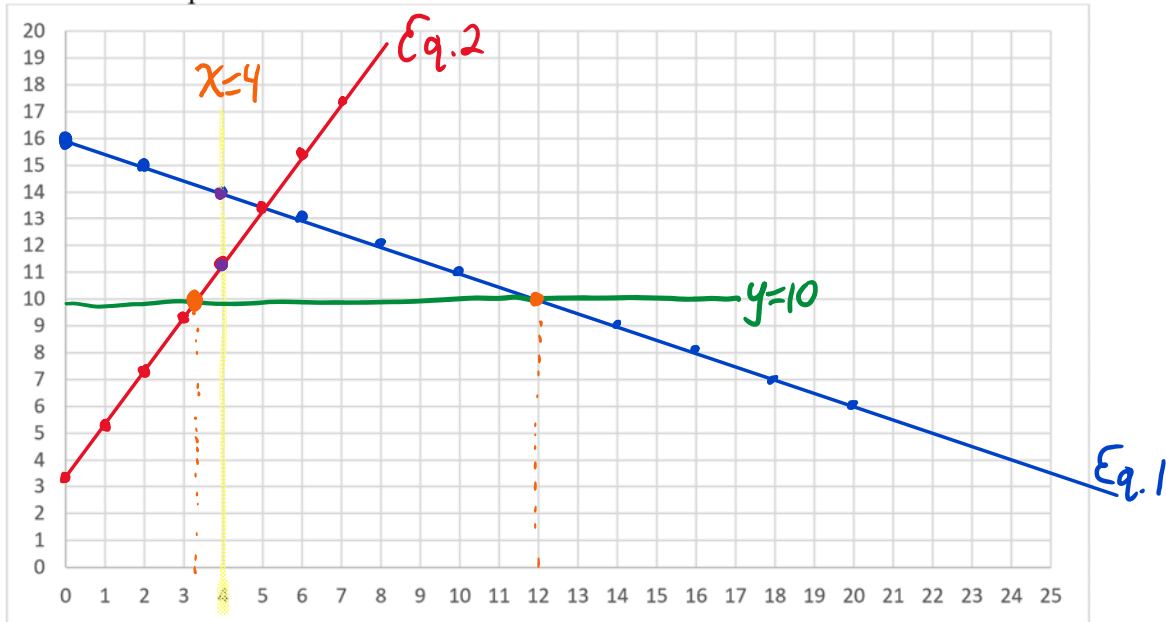
By what % did x increase? Using Normal Method: _____ Using Midpoint Method: _____

By what % did y increase? Using Normal Method: _____ Using Midpoint Method: _____

Introductory Microeconomics Graphing and algebra review Set Two: Practice Answers! www.burkeyacademy.com

Equation 1: $y=16-0.5x$ or $y=16-\frac{1}{2}x$ $-\frac{1}{2} = \text{down } 1, \text{ over } 2$
 Equation 2: $y=3.5+2x$

Problem 1: Graph these two lines.



Problem 2a: If $x=4$, what is y in equation 1? $16-\frac{1}{2}(4) = 14$

Problem 2b: If $x=4$, what is y in equation 2? $3.5+2(4) = 11.5$

Problem 2c: Draw a vertical line at $x=4$. What is the distance (on the y axis) between the Equation 1 line and the Equation 2 line at $x=4$? $14-11.5 = \text{These lines are } 2.5 \text{ apart}$

Problem 3a: If $y=10$, what is x in equation 1? $10=16-\frac{1}{2}x \Rightarrow \frac{1}{2}x=6, x=12$

Problem 3b: If $y=10$, what is x in equation 2? $10=3.5+2x \Rightarrow 6.5=2x, x=3.25$

Problem 3c: Draw a horizontal line at $y=14$. What is the distance (on the x axis) between the Equation 1 line and the Equation 2 line at $y=14$? $12-3.25, \text{ These lines are } 8.75 \text{ apart on the } x \text{ axis.}$

Problem 4: Look at the graph. At what x and y do these lines cross (approximately)? $y \approx 13.5, x \approx 5$

Problem 5: Solve these two equations for the two unknowns where they cross. Show your work.

$$\begin{aligned} & \left. \begin{aligned} y &= 16 - \frac{1}{2}x \\ y &= 3.5 + 2x \end{aligned} \right\} \begin{aligned} 16 - \frac{1}{2}x &= 3.5 + 2x \\ 12.5 &= 2.5x \\ x &= 5 \end{aligned} \quad \begin{aligned} & \text{Plug } 5 = x \text{ into either equation:} \\ y &= 16 - 5\left(\frac{1}{2}\right) = 16 - 2.5 = \underline{\underline{13.5}} \end{aligned} \end{aligned}$$

Problem 6: In Equation 1: If x goes from 5 to 10, y goes from 13.5 to 11.

$\frac{10-5}{5} \times 100$ By what % did x increase? Using Normal Method: 100% Using Midpoint Method: 66.7% $\frac{10-5}{7.5} \times 100$

$\frac{11-13.5}{13.5} \times 100$ By what % did y increase? Using Normal Method: -18.5% Using Midpoint Method: -20.4% $\frac{11-13.5}{12.25} \times 100$