

PPPA 6085
Intermediate Microeconomics
Math Review Handout

Graphing a Linear Equation

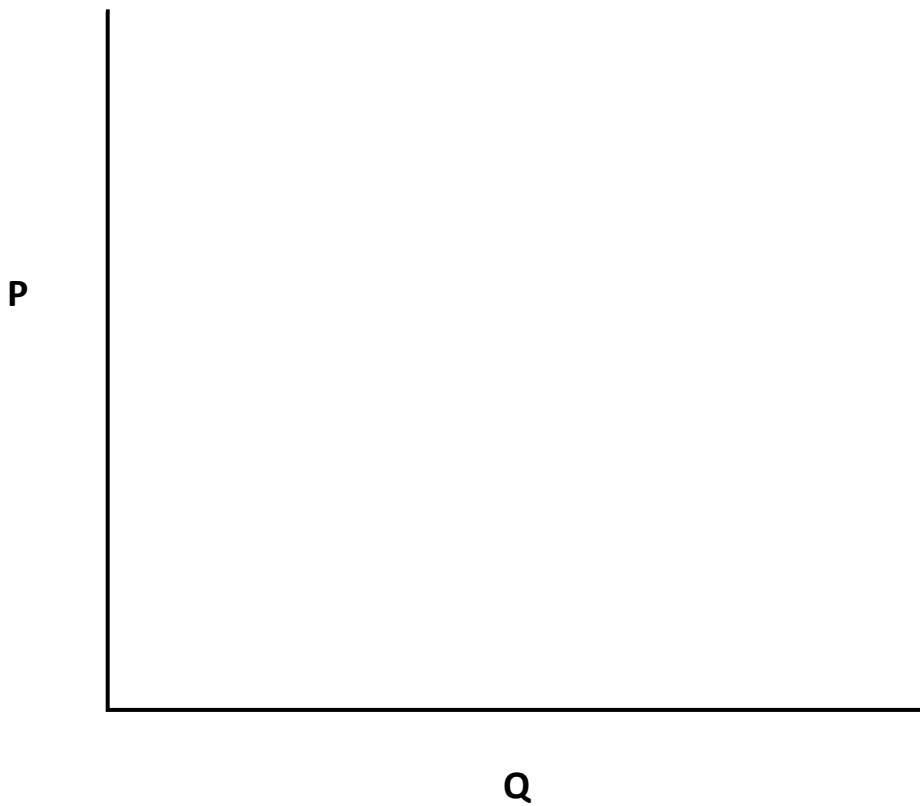
$$Q = 500 - 50P$$

Plug in the zeros

Where does the line intersect with the vertical axis? Where does the line intersect with the horizontal axis?

When Q is 0, P = ___

When P is 0, Q = ___



Find the Slope

Slope is rise over run. Alternatively stated, slope is the change in P over the change in Q.

Using the vertical and horizontal intercepts above, we start at point (0, 10) and move along the line to point (500, 0). The rise is -10 and the run is 500. So the slope is:

$$-10/500 = -1/50 \text{ or } -0.02$$

There is another way to find the slope that you will need to know.

$$Q = 500 - 50P$$

Solve for P:

$$50P = 500 - Q$$

$$P = 10 - 0.02Q$$

Recall from algebra (or Khan Academy) that the slope-intercept form of a linear equation is $y = mx + b$, where m is the slope and b is the y intercept. How does the equation above relate to the slope-intercept form of a linear equation?

$$y =$$

$$m =$$

$$x =$$

$$b =$$

$$Q = 10 + P$$

Group Work

$$Q = 1/2 - 3/4(P)$$

$$2,000Q = 10,000 - 5,000P$$

Solving a System of Two Linear Equations

$$Q_D = 50 - 10P_D$$

$$Q_S = 20 + 5P_S$$

We want to know where these two lines meet; that is, where does $Q_D = Q_S$ and $P_D = P_S$?

$$25Q_D = 50 - P_D; Q_S = 5P_S$$

Group Work

$$1/4Q_D = 1/2 - P_D; Q_S = 1/4 + 1/2P_S$$

$$8Q_D = 6 - 14P_D; 3Q_S = 2 + 13P_S$$

Exponents Overview

$$x^3 = x * x * x$$

$$x^{-3} = 1/x^3$$

$$x^{(1/3)} = \sqrt[3]{x}$$

$$x^{(-3/4)} =$$