

Chapter 5: Writing Linear Equations
Study Guide (REG)

5.1: Write equations of lines given slope and y – intercept or two points

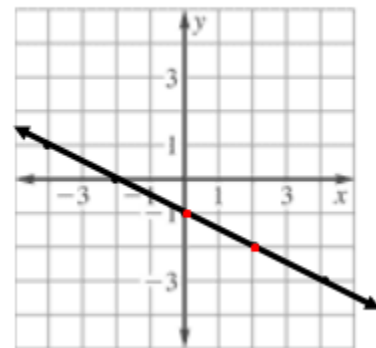
Write the equation of the line with the given information:

Ex: Slope: 0, y – intercept: $\frac{1}{2}$

Ex: Passes through (0, 5) and (1, 7)

Ex: passes through (1, -9) and (0, -11)

Ex:



5.2: Write the equation of lines given slope and one point, or two points

Write the equation of the line with the given information:

Ex: Slope 3, passes through (1, 1)

Ex: Slope -5, passes through (-4, 7)

Ex: Passes through (1, 4) (2, 7)

Ex: Passes through (-2, -2) (1, -1)

Ex: $(-3, 1)$ $(-3, -1)$

Ex: $(1, 5)$ $(-7, 5)$

Ex: Passes through $(9, 1)$ and $(1, 7)$

Ex: $(3, 1)$ and $(6, 4)$

Ex: You are taking a Tae Kwon Do class that costs \$15 a month. In addition, you needed to purchase a uniform. You paid a total of \$108 after 6 months.

- a. Find the cost of a uniform. Show or explain your work.

- b. Write an equation that gives the total cost (in dollars) as a function of the length of time you have been taking classes (in months).

- c. Find the total cost after 9 months.

Ex: You have a subscription to an online magazine that allows you to view 25 articles from the magazine's archives. You are charged an additional fee for each article after the first 25 articles viewed. After viewing 28 articles, you paid a total of \$34.80. After viewing 30 articles, you paid a total of \$40.70.

a. What is the cost per archived article after the first 25 articles viewed?

b. What is the cost of the magazine subscription?

Ex: A delivery service charges a base price for an overnight delivery of a package, plus an extra charge for each pound the package weighs. A customer is billed \$22.85 for shipping a 3-lb package and \$40 for shipping a 10-lb package.

a. Write an equation that gives the total cost for shipping a package of any weight.

b. Then find the cost of shipping a 15-lb package.

5.5: Write Equation of Parallel and Perpendicular Lines

Ex: Write the equation of the line that is parallel to $-6x + y = -1$ and passes through the point $(1, 7)$

Ex: Write the equation of the line that is perpendicular to $y + 3 = 2x$ and passes through the point $(-5, 2)$

Ex: Determine which lines, if any, are parallel or perpendicular:

a. $y = \frac{3}{5}x + 1$

b. $5y = 3x - 2$

c. $10x - 6y = -4$

5.4: Write Equations of Lines in Standard Form

Write two equivalent equations in standard form:

Ex: $3x - 6y = 9$

Write equations of lines in standard form using the given information:

Ex: $(4, 4)$ and $(8, 2)$

Ex: $(-2, 3)$ and $(-4, -5)$

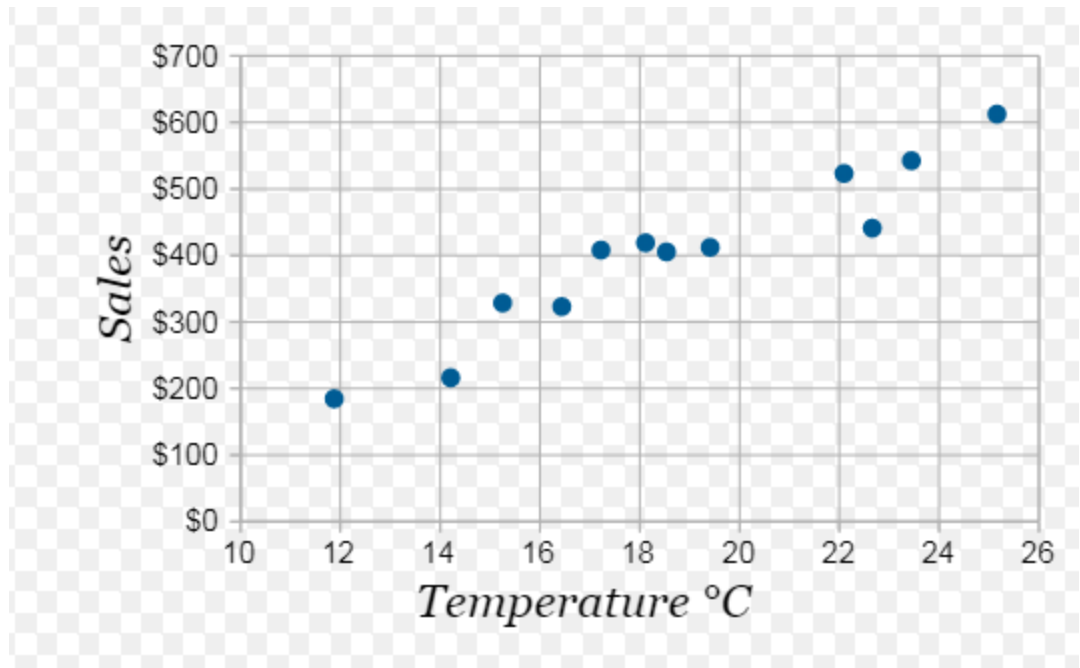
Ex: Write the equations of the horizontal and vertical lines that pass through the point $(7, 2)$

Complete equations in standard form:

Ex: $5x + By = 6; (2, 1)$

Ex: $Ax + 5y = 7; (4, 3)$

Use the scatter plot below to determine the type of association and decide which line is most representative of the relationship between x and y .



A. Please choose the best description of the relationship between x and y .

1. Relatively no correlation
2. Positive correlation
3. Negative correlation

B. Which equation provides the best description of the relationship between x and y ?

1. $y = 35x$
2. $y = -12x + 150$
3. $y = 30x + 150$
4. $y = 25x - 10$