

4.6

Writing Equations in Slope Intercept Form

Practice

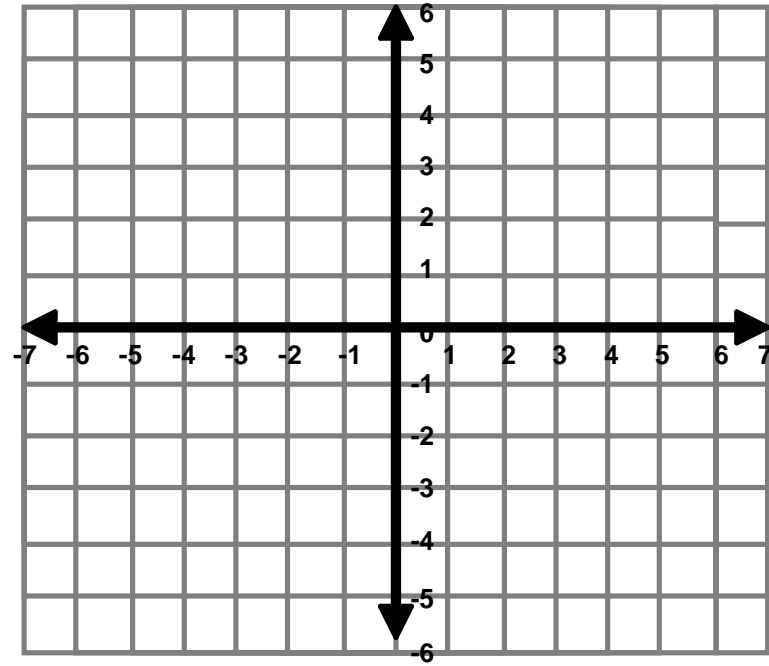
$$1) -3x + 9y = -18$$

x-intercept

Plug-in $y=0$ into the equation and solve for x .

y-intercept

Plug-in $x=0$ into the equation and solve for y .



Graph the equation using the intercepts.

Practice

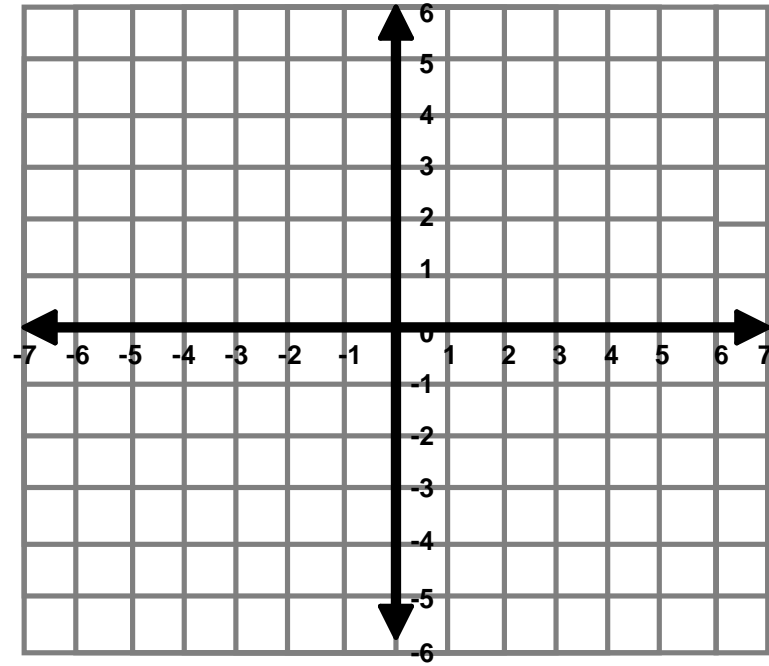
$$2) \quad 2x + y = 10$$

x-intercept

Plug-in $y=0$ into the equation and solve for x .

y-intercept

Plug-in $x=0$ into the equation and solve for y .



Graph the equation using the intercepts.

Slope-Intercept Form

**What is the equation of line
in slope-intercept form?**

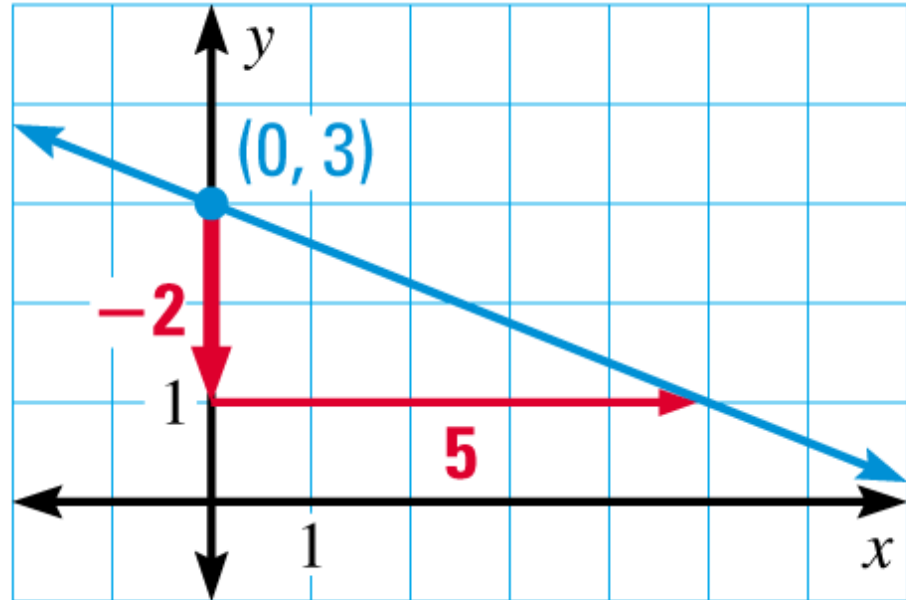


Example

- a) Write an equation of the line with a slope of -2 and a y -intercept of 5.

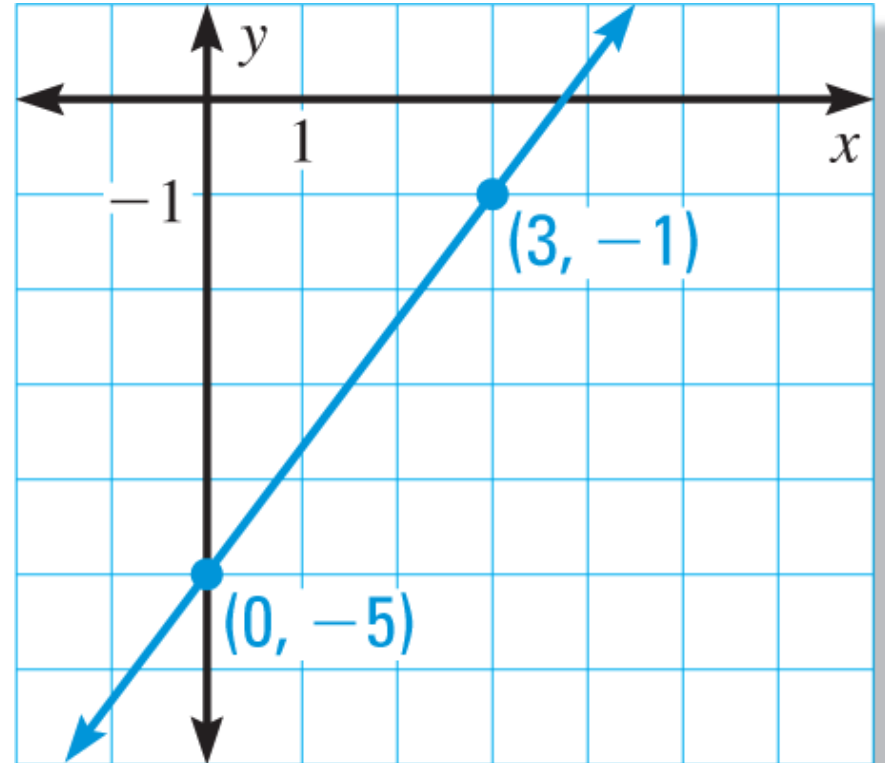
Example

b) Write an equation of the line shown.



Example

c) Write an equation of the line shown.

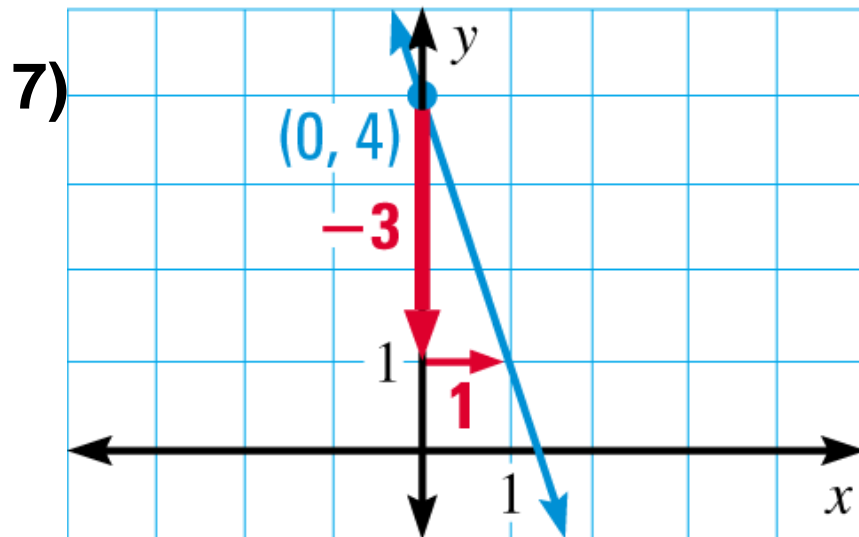
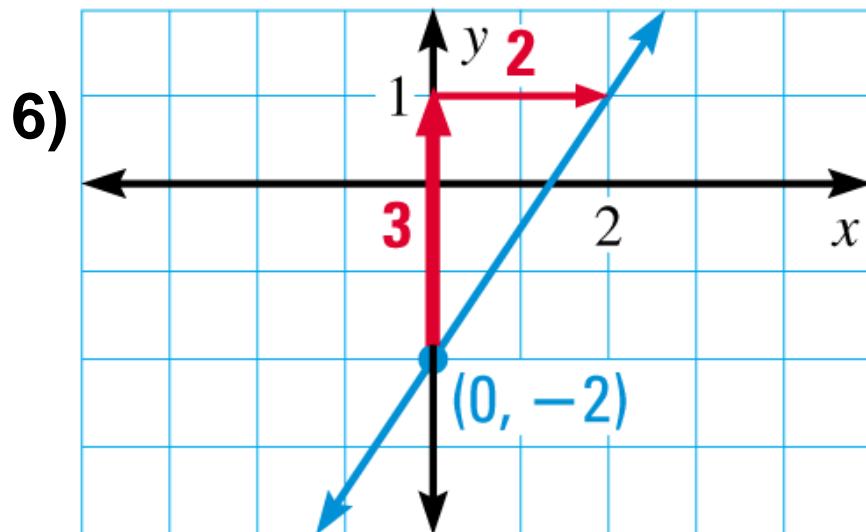


Practice

- 5) Write an equation of the line with a slope of 8 and a y -intercept of -7 .

Practice

Write an equation of the line shown.



Writing an Equation of Line from Two Points

Step 1) Find the slope between the two points

Step 2) Plug the slope into slope-intercept form

Step 3) Find the y-int. using one of the two points

Example

a) Write an equation of the line that passes through the points $(2, -1)$, $(0, 6)$.

Writing an Equation of Line from Two Points

Step 1) Find the slope between the two points

Step 2) Plug the slope into slope-intercept form

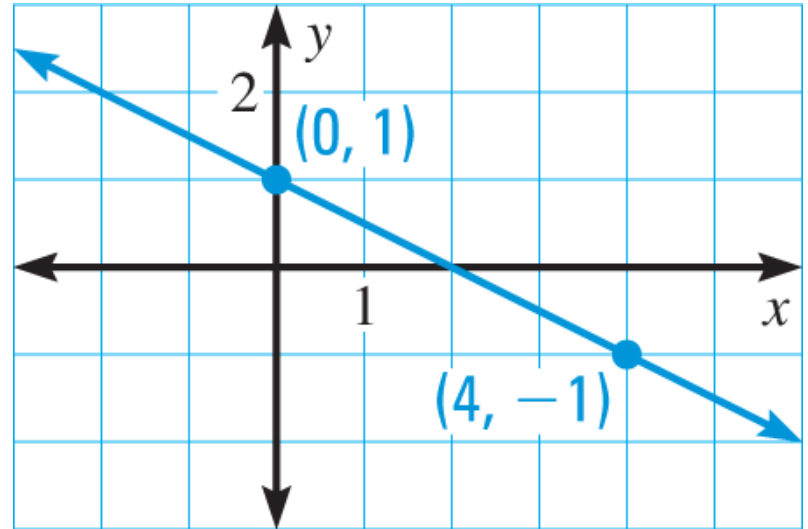
Step 3) Find the y-int. using one of the two points

Example

b) Write an equation of the line that passes through the points $(3, -1)$, $(0, -4)$.

Practice

8) Write an equation of the line shown.



Practice

- 9) Write an equation of the line that passes through the points $(0, -5)$, $(4, -9)$.

Translating Word Problems into Slope-Intercept Form

- 1) Suppose that the water level of a river is 34 feet and that it is increasing at a rate of 0.5 foot per day. Write an equation for the water level, y , after x days. In how many days will the water level be 42 feet?
- 2) Seth's father is thinking of buying his son a six-month movie pass for \$40. With the pass, matinees cost \$1.00. If matinees are normally \$3.50 each, how many times must Seth attend in order for it to benefit his father to buy the pass?

Translating Word Problems into Slope-Intercept Form

- 3) For babysitting, Nicole charges a flat fee of \$3, plus \$5 per hour. Write an equation for the cost, y , after x hours of babysitting. What do you think the slope and the y -intercept represent? How much money will she make if she baby-sits 5 hours?
- 4) A canoe rental service charges a \$20 transportation fee and \$30 dollars an hour to rent a canoe. Write and graph an equation representing the cost, y , of renting a canoe for x hours. What is the cost of renting the canoe for 6 hours?

Translating Word Problems into Standard Form

- 5) A 100-point test has x questions worth 2 points apiece and y questions worth 4 points apiece.

What is the total that is given? _____

What do the variables stand for:

x =_____, **y** = _____

- a. Write an equation that describes all possible numbers of questions that may be on the test.
- b. If you have 24 questions worth 4 points apiece, how many questions will be worth 2 points apiece?

Translating Word Problems into Standard Form

- 6) Louise has \$36 in five-dollar bills and singles. How many of each type of bill does she have?

What is the total that is given? _____

What do the variables stand for:

x=_____, **y=** _____

a. Write an equation.

b. If Louise has 2 five-dollar bills, how many singles does she have?

Translating Word Problems into Standard Form

- 7) The Ramy family bought 4 sandwiches and 3 salads. They spent \$24. Let x be the cost of a sandwich and y be the cost of a salad.

What is the total that is given? _____

What do the variables stand for:

x =_____, **y** = _____

a. Write an equation.

b. If each sandwich costs \$3.75, how much did each salad cost?