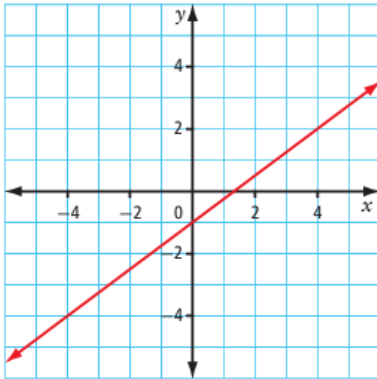


Slope-Intercept Form

Show You Know

Ex. 1

- a) What are the slope and y-intercept of the line shown in the graph?



- b) What is the equation of the line in slope-intercept form, $y = mx + b$?
- c) Use graphing technology to check your equation.

Ex. 2

Parents of members of the cheerleading squad rent a hall. They arrange a talent show as a fundraiser. The relationship between the number of tickets sold, x , and the profit, y , in dollars, may be represented by the equation $12x - y - 840 = 0$.

- a) What is the slope of the line? What does the slope represent?
- b) Identify the y-intercept. What does it represent?
- c) How many tickets must the parents sell to reach the break-even point?

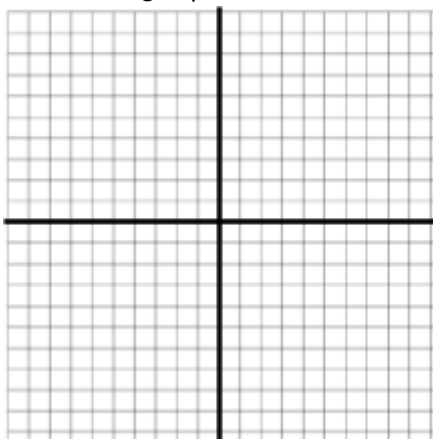
Slope-Intercept Form

Ex. 3

Asha has selected a hotel for her wedding reception. The cost involves a fee for the deluxe ballroom and a buffet charge that depends on the number of guests. This is shown in the table.

Number of Guests	Cost (\$)
0	425
25	1800
50	3175
100	5925

a) Sketch a graph of the data in the table.



b) What are the slope and y-intercept of the line? What does each parameter represent?

c) Write an equation that describes the relationship between the cost and the number of guests. Express the equation in slope intercept form.

d) What is the cost for 140 guests?

e) Asha would like the total cost to be no more than \$15 000. What is the maximum number of guests that can attend?

Slope-Intercept Form

Ex. 4

A decorator's fee can be modeled by the equation $F = 75t + b$. In the equation, F represents the fee, in dollars, t represents time, in hours, and b represents the cost of the initial consultation, in dollars.

- a) Suppose the decorator spends 4 h working for a client and charges the client \$450. Determine the value of the parameter b .
- b) How many hours does the decorator work if a client is charged \$975?

Practice

1. What are the slope and y-intercept of each line?

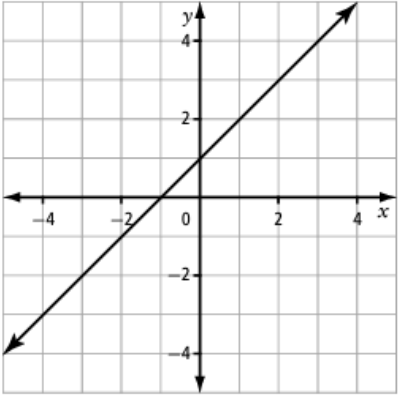
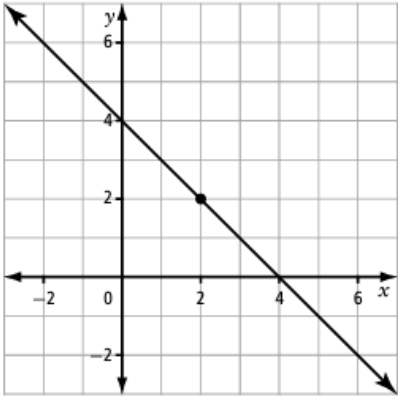
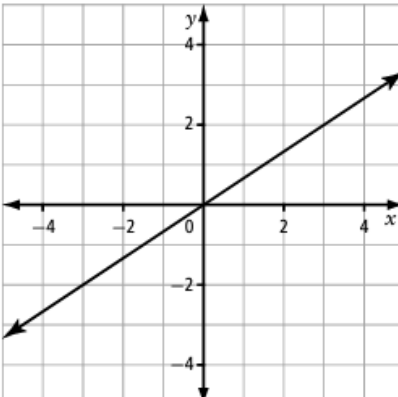
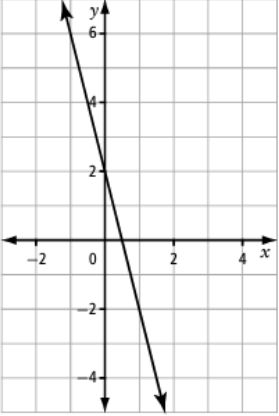
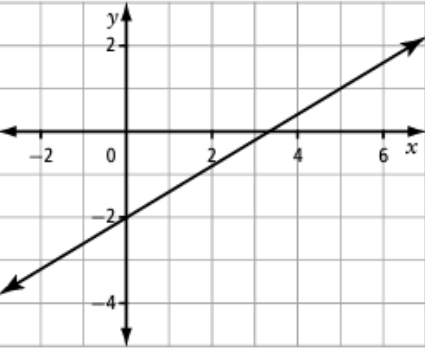
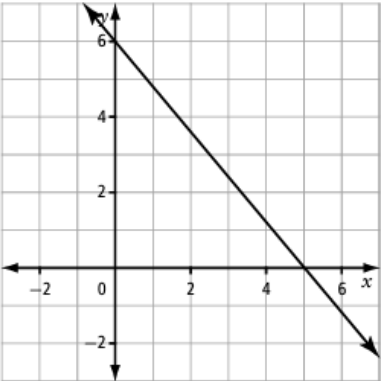
a) $y = \frac{1}{2}x - 2$	b) $y = -4x + 3$	c) $y = x$	d) $y = 0.75x + 3.5$
---------------------------	------------------	------------	----------------------

2. Convert each of the following into slope-intercept form. Then, state the slope and y-intercept.

a) $x + y = 7$	b) $y - 4x = 12$	c) $5x + 2y = 10$	d) $x - 3y - 12 = 0$
----------------	------------------	-------------------	----------------------

Slope-Intercept Form

3. What are the slope and y-intercept of each line? Write the equation of each line in slope-intercept form.

<p>a)</p> 	<p>b)</p> 
<p>c)</p> 	<p>d)</p> 
<p>e)</p> 	<p>f)</p> 

Slope-Intercept Form

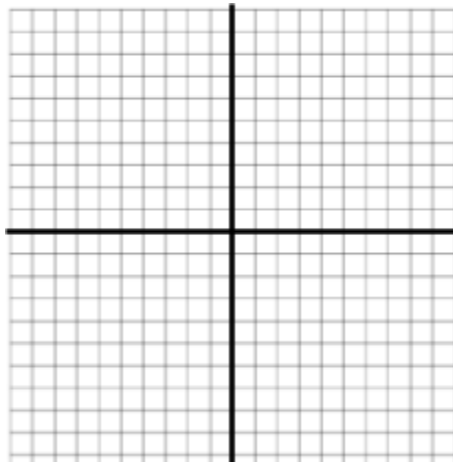
4. Mr. Wong's class is holding a raffle to raise money for earthquake relief efforts. The class buys a pair of Edmonton Oilers hockey tickets for \$250 as the prize. The raffle tickets are going to be sold for \$2 each.
- Write a linear equation to represent the money raised based on the ticket sales, x , and the cost of the prize.
 - What is the slope of the line? What does it represent?
 - What is the y-intercept? What does it represent?
 - How many tickets does the class need to sell if they want to raise \$300.00?

Slope-Intercept Form

5. The following table shows the linear relationship between temperatures in degrees Celsius and temperatures in degrees Fahrenheit.

a. Sketch the graph of the line through the points.

°C	°F
-50	-58
-10	14
5	41
20	68



b. What is the slope?

c. What is the y-intercept? What does it represent?

d. Write the equation in slope-intercept form, where x represents degrees Celsius and y represents degrees Fahrenheit.

e. Calculate the conversions using your graph or equation.

i. $-40\text{ }^{\circ}\text{C} =$

ii. $100\text{ }^{\circ}\text{F} =$

iii. $0\text{ }^{\circ}\text{C} =$