

Practice 5.4

For this practice, unless otherwise stated, use 1 grid square to represent 1 unit on both axes for the interval from -8 to 8 . Solve each system of linear equations using the graphical method.

1 $x + y = 6$
 $2x + y = 8$

- a) Copy and complete the tables of values for the system of linear equations.

$x + y = 6$

x	0	1	2
y	6	?	?

$2x + y = 8$

x	0	1	2
y	?	6	?

- b) Graph $x + y = 6$ and $2x + y = 8$ on the same coordinate plane. Find the point of intersection.
- c) Use the graph in **b)** to solve the system of linear equations.

2 $x + y = 5$
 $x - y = 2$

- a) Copy and complete the tables of values for the system of linear equations.

$x + y = 5$

x	0	1	2
y	5	?	?

$x - y = 2$

x	0	1	2
y	?	-1	?

- b) Graph $x + y = 5$ and $x - y = 2$ on the same coordinate plane. Find the point of intersection.
- c) Use the graph in **b)** to solve the system of linear equations.

3 $x + 2y = 5$
 $2x - 2y = 1$

- a) Graph $x + 2y = 5$ and $2x - 2y = 1$ on the same coordinate plane. Find the point of intersection of the graphs.
- b) Use the graph in **a)** to solve the system of linear equations.

4 $2x + 3y = -1$
 $x - 2y = 3$

- a) Graph $2x + 3y = -1$ and $x - 2y = 3$ on the same coordinate plane. Find the point of intersection of the graphs.
- b) Use the graph in a) to solve the system of linear equations.

Solve each system of equations using the graphical method.

5 $x = 2y$
 $y = x + 2$

6 $y = 3$
 $y = 2x + 1$

7 $x = 2$
 $y = 2x - 8$

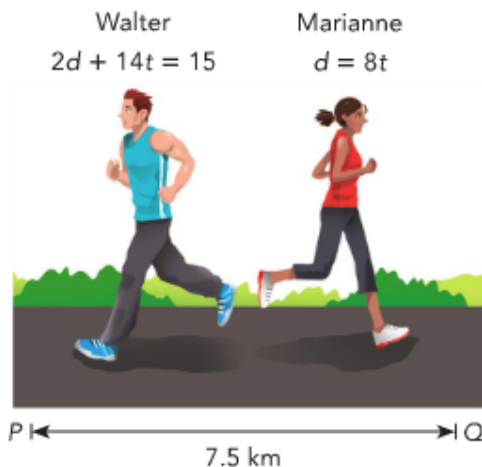
8 $3x - 2y = 19$
 $3y = 2x - 21$

9 $2x + y = 11$
 $x + 3y = 18$


10 $x + 2y = 1$
 $4y - x = 17$

Solve. Show your work.


- 11 Marianne jogged from point P to point Q while Walter jogged from point Q to point P . Point P and point Q are 7.5 kilometers apart. Marianne's motion is represented by $d = 8t$ and Walter's motion is represented by $2d + 14t = 15$, where t hours is the time and d kilometers is the distance from point P .




- a) Solve the system of linear equations using the graphical method.
- b) When did Marianne and Walter meet? How far from point Q did they meet?

- 12  **Math Journal** Explain when it is convenient to use each method of solving a system of linear equations: Elimination, substitution, and graphical. Give an example for each method.

- 13 Two cyclists are traveling along a track in the same direction. Their motions are described by the linear equations $d = 10t$ and $d - 8t = 2$, where t hours is the time and d miles is the distance from point A on the track.

- a)  Solve the system of linear equations using a graphing calculator.
- b) When will the cyclists meet?

- 14 Dr. Murray is heating a beaker containing Liquid A and a beaker containing Liquid B. The temperature of Liquid A is represented by $T = 2t + 140$ and the temperature of Liquid B is represented by $T = t + 160$, where $T^\circ\text{F}$ is the temperature of the liquid after t seconds.

- a)  Solve the system of linear equations using a graphing calculator.
- b) When will the temperatures of the liquids be the same?