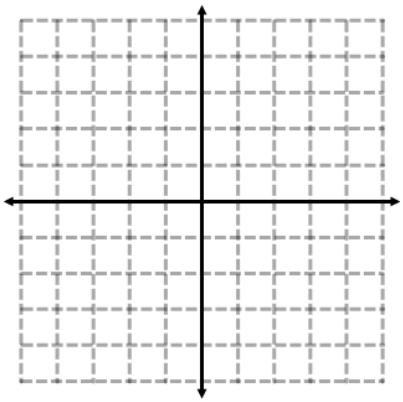
Graphing Parallel Lines

1. (a) Graph the equations $y = -\frac{2}{5}x + 1$ and $y = -\frac{2}{5}x + 3$ on the coordinate plane below.



(b) What do you notice about the two lines that you graphed?

2. State whether the following lines are parallel.

(a) $y = 5x + 2$ and $y = 5x - 1$ _____

(b) $y = 4x - 5$ and $y = 7x - 5$ _____

(c) $3x + 2y = 12$ and $6x + 4y = 8$ _____

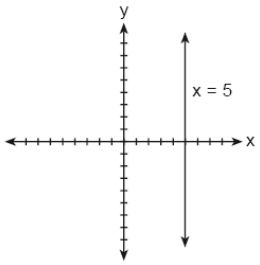
3. What is the slope of a line that is parallel to $y = -2x + 5$?

4. Write the equation of a line that is parallel to $y = 8x + 4$ and has a y-intercept of -3.

5. Write the equation of a line that is parallel to $y = -3x - 2$ and passes through point $(-1, 4)$.

6. Write the equation of a line that is parallel to $y = x + 1$ and passes through point $(3, 5)$.

7. The accompanying figure shows the graph of the equation $x = 5$.

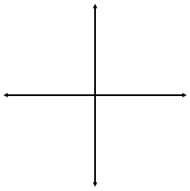


What is the slope of the line $x = 5$?
(1) 5 (3) –5
(2) 0 (4) undefined

8. Which properties best describe the coordinate graph of two distinct parallel lines?

(1) same slopes and same intercepts
(2) same slopes and different intercepts
(3) different slopes and same intercepts
(4) different slopes and different intercepts

9. Line *P* and line *C* lie on a coordinate plane and have equal slopes. Neither line crosses the second or third quadrant. Draw a sketch of the two lines.



Lines *P* and *C* must
(1) form an angle of 45°
(2) be perpendicular
(3) be horizontal
(4) be vertical

10. If two lines are parallel and the slope of one of the lines is *m*, what is the product of their slopes?

(1) 1 (3) $2m$
(2) m^2 (4) 0