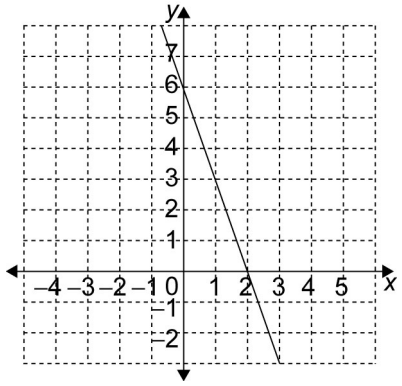
6.1 Day 2 Worksheet: The Equation of a Line in Slope *y*-Intercept Form: $y = mx + b$

1. Complete the table.

	Equation	Slope	*y*-Intercept
a)	$y = 4x + 1$		
b)	$y = \frac{x}{2} - 3$		
c)	$y = -2x$		
d)	$y = -x + 2$		

2. Find the slope and *y*-intercept of each line.

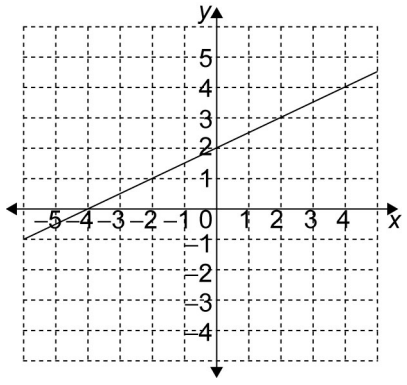
a)



slope:

y-intercept:

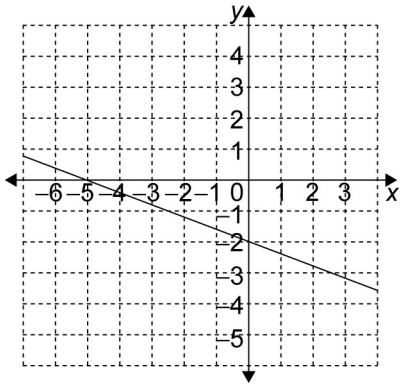
b)



slope:

y-intercept:

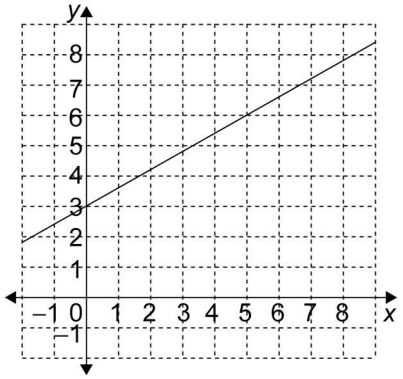
c)



slope:

y-intercept:

d)



slope:

y-intercept:

3. Write the equation of each line in question 2.

a)

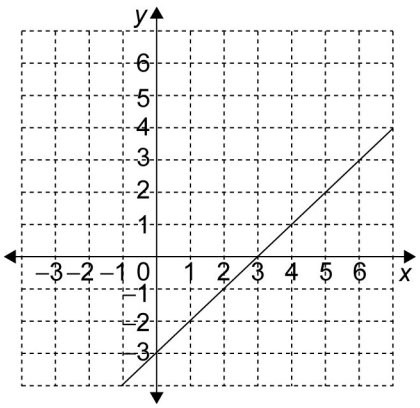
b)

c)

d)

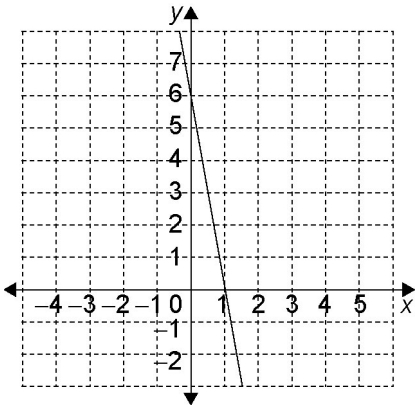
4. Write the equation of each line.

a)



Equation:

b)



Equation:

5. Write the equation of a line with each slope and *y*-intercept.

	Slope	***y*-Intercept**
a)	-2	1
b)	$\frac{2}{3}$	-4
c)	5	0
d)	$-\frac{3}{2}$	3

a)

b)

c)

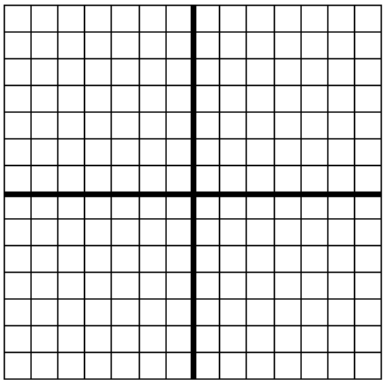
d)

6. Find the slope and *y*-intercept of each line, if they exist. Graph each line.

a) $y = -\frac{1}{2}x + 3$

slope:

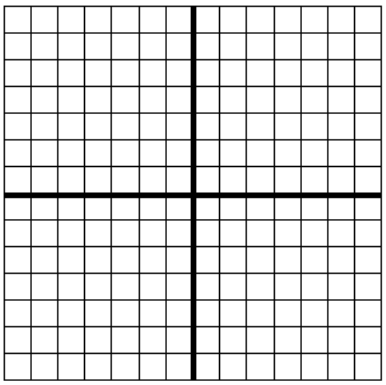
y-intercept:



b) $y = x - 4$

slope:

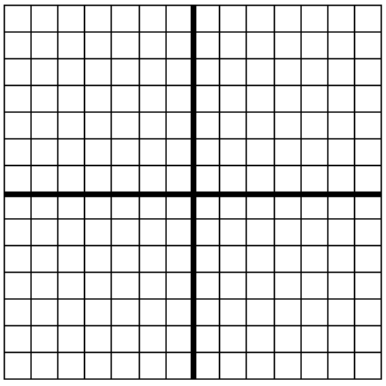
y-intercept:



c) $y = 5$

slope:

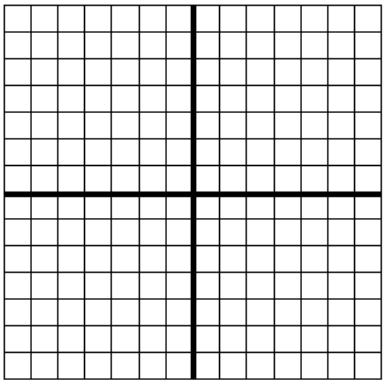
y-intercept:



d) $y = -\frac{x}{2}$

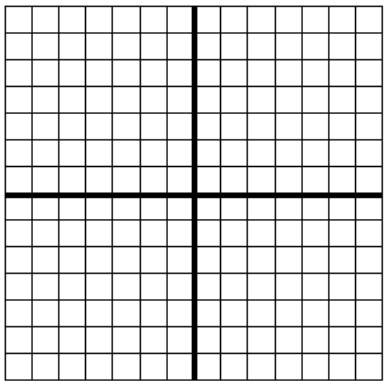
slope:

y-intercept:

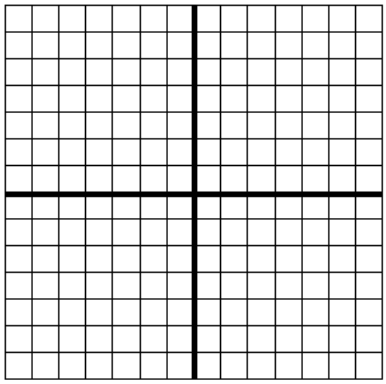


7. State the slope and the y-intercept of each line, if they exist. Then graph each line.

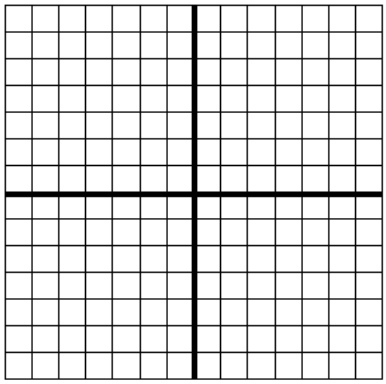
a) $y = -5$



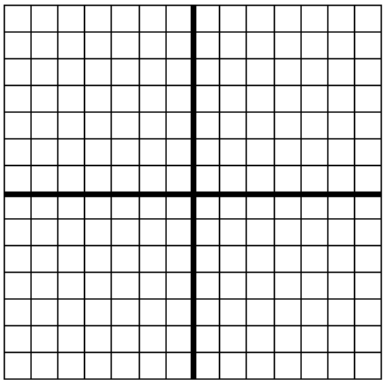
b) $x = 1$



c) $y = \frac{7}{2}$



d) $x = -2.5$



Answers

1.

	Equation	Slope	*y*-Intercept
a)	$y = 4x + 1$	4	1
b)	$y = \frac{x}{2} - 3$	$\frac{1}{2}$	–3
c)	$y = -2x$	–2	0
d)	$y = -x + 2$	–1	2

2. **a)** –3; 6

b) $\frac{1}{2}$; 2

c) $-\frac{2}{5}$; –2

d) $\frac{3}{5}$; 3

3. **a)** $y = -3x + 6$

b) $y = \frac{1}{2}x + 2$

c) $y = -\frac{2}{5}x - 2$

d) $y = \frac{3}{5}x + 3$

4. a) $y = x - 3$

b) $y = -6x + 6$

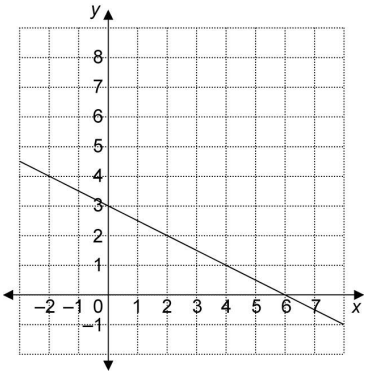
5. a) $y = -2x + 1$

b) $y = \frac{2}{3}x - 4$

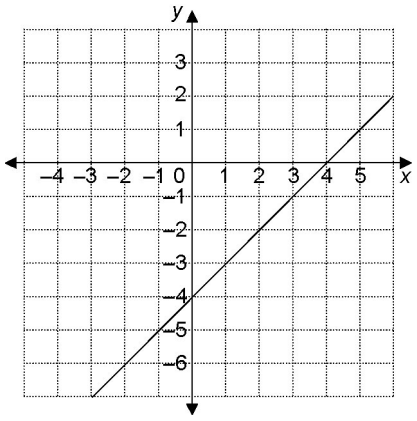
c) $y = 5x$

d) $y = -\frac{3}{2}x + 3$

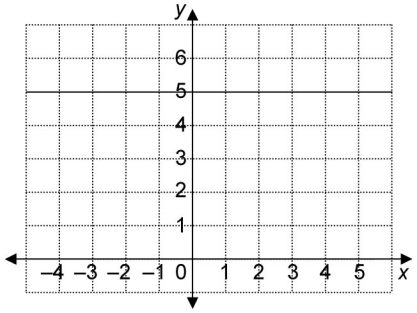
6. a) slope $-\frac{1}{2}$; y-intercept 3



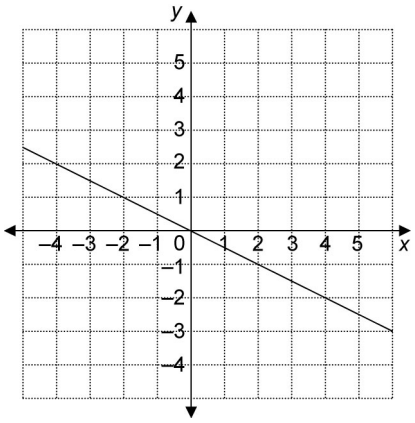
b) slope 1; y-intercept −4



c) slope 0; y-intercept 5



d) slope $-\frac{1}{2}$; y-intercept 0



7.

a) The slope is 0, and the y-intercept is −5.

b) The slope is undefined, and there is no y-intercept.

c) The slope is 0, and the y-intercept is $\frac{7}{2}$.

d) The slope is undefined, and there is no y-intercept.