

Math 101, Ch. 3 Practice Test

1. In which quadrant or axis does each of the following lie?

(a) (10, 5)

(b) (1, 0)

(c) (5, -1)

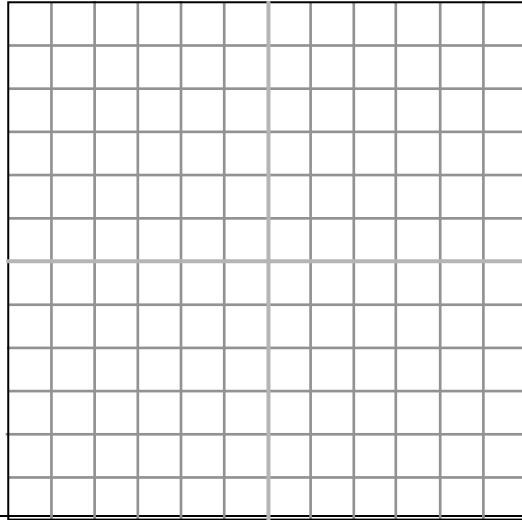
(d) (-2, -4)

2. State the x -intercept and y -intercept and use them to graph the equation

$$5x - 2y = 10$$

x -intercept: (,)

y -intercept: (,)

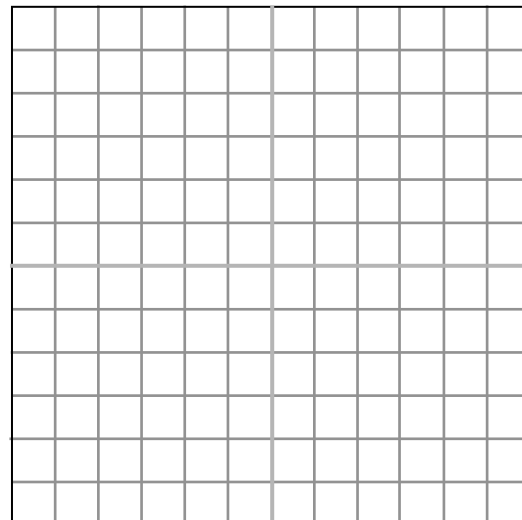


3. Solve for y , then complete the table of values for

$$-6x + 3y = -3$$

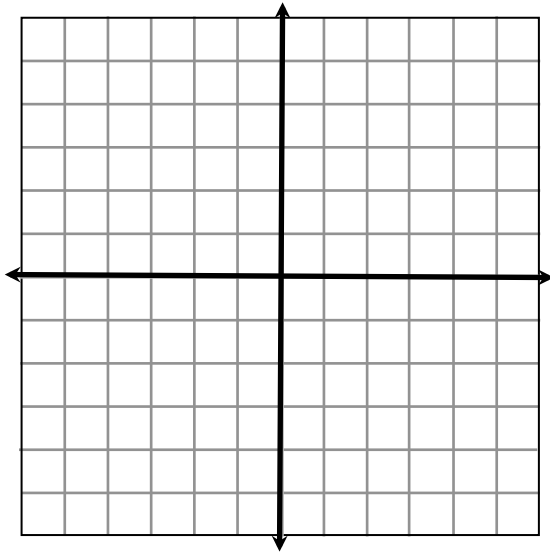
x	y
-2	
-1	
0	
1	
2	

4. Use the table of values in #3 to graph the equation $-6x + 3y = -3$.



5. Graph

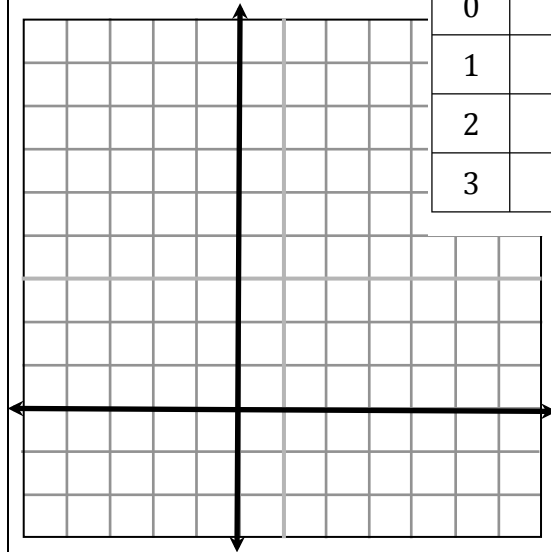
$$x = 3$$



6. Graph

$$y = x^2 - 2$$

x	y
-3	
-2	
-1	
0	
1	
2	
3	



7. Determine the slope and y-intercept of each equation

(a) $y = \frac{1}{3}x - 10$

(b) $y = -x + 2$

8. Determine the slope and y-intercept of each equation

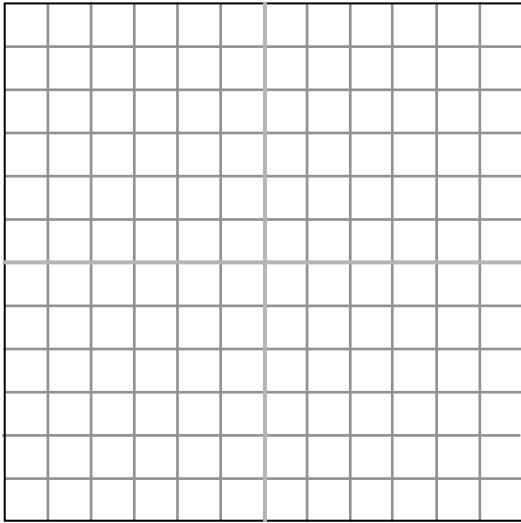
(a) $y = -\frac{3}{4}x$

(b) $y = 5$

<p>9. (a) Determine the slope of the line that passes through the points</p> <p>(a) (5, 4) and (4, 1)</p> <p>(b) (-3, -3) and (-2, -4)</p>	<p>10. Are the following lines parallel, perpendicular or neither?</p> <p>(a) $y = -3x + 4$ $y = 3x + 5$</p> <p>(b) $y = \frac{3}{7}x + 4$ $y = -\frac{7}{3}x + 5$</p>
<p>11. Are the following lines parallel, perpendicular or neither?</p> <p>(a) $y = 4x + 4$ $y = 4x + 5$</p> <p>(b) $y = \frac{4}{5}x + 4$ $y = \frac{5}{4}x + 5$</p>	<p>12. (a) Determine the slope of the line with the following equation:</p> $x - 2y = 12$ <p>(b) What is the slope of a line perpendicular to the one above?</p> $m_{\perp} =$

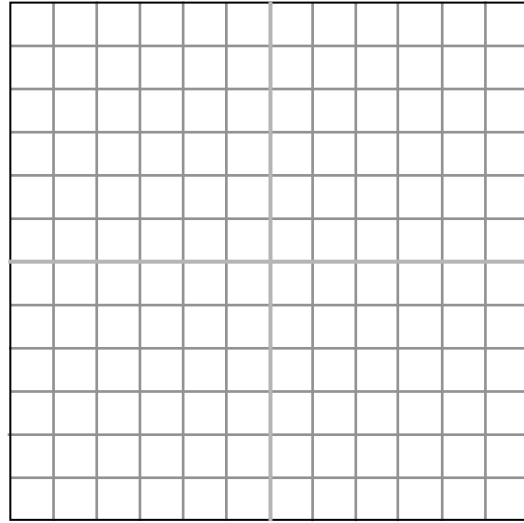
13. Use the slope and y-intercept to graph

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

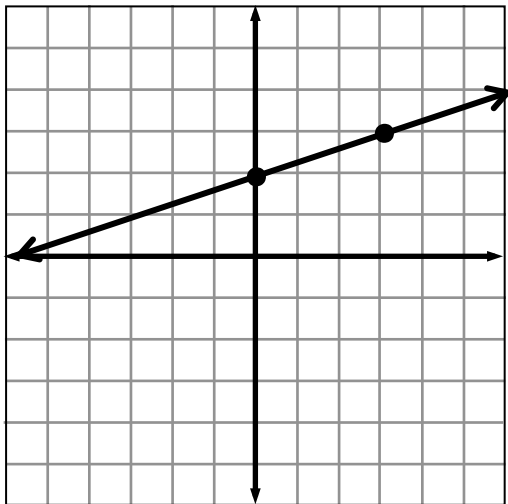


14. Use the slope and y-intercept to graph

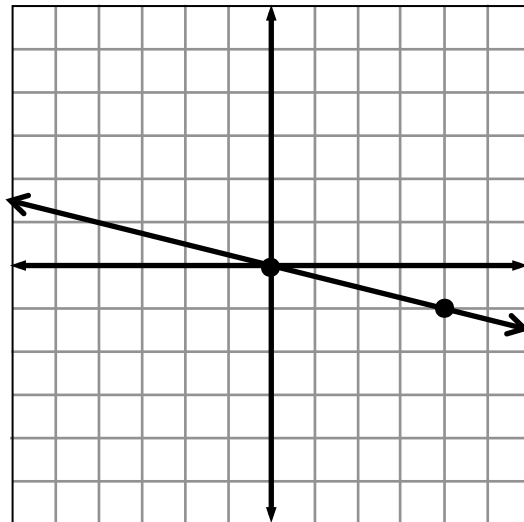
$$y = 2x - 4$$



15. Write the equation in slope-intercept form ($y = mx + b$) of the line shown.



16. Write the equation in slope-intercept form ($y = mx + b$) of the line shown.



<p>17. Write the equation in slope-intercept form ($y = mx + b$) of a line that has slope -5 and passes through $(0, 1)$.</p>	<p>18. Write the equation in slope-intercept form ($y = mx + b$) of a line that has slope $\frac{1}{4}$ and passes through $(4, 5)$.</p>
<p>19. Write the equation in slope-intercept form ($y = mx + b$) of the line that passes through $(-3, -5)$ and $(0, 1)$</p>	<p>20. Write the equation in slope-intercept form ($y = mx + b$) of the line that passes through $(4, -2)$ and $(0, -2)$</p>

21. Write the equation in slope-intercept form ($y = mx + b$) of the line that passes through $(6, 1)$ and is parallel to $-6x + 3y = 12$

22. Write the equation in slope-intercept form ($y = mx + b$) of the line that passes through $(6, 1)$ and is perpendicular to $-6x + 3y = 12$

23. Determine if the following mappings are functions or not.

(a) $x \rightarrow y$

$0 \rightarrow -4$

$3 \rightarrow -2$
 $5 \rightarrow -2$

(b) $x \rightarrow y$

$1 \rightarrow 1$
 $1 \rightarrow 3$

$2 \rightarrow 5$

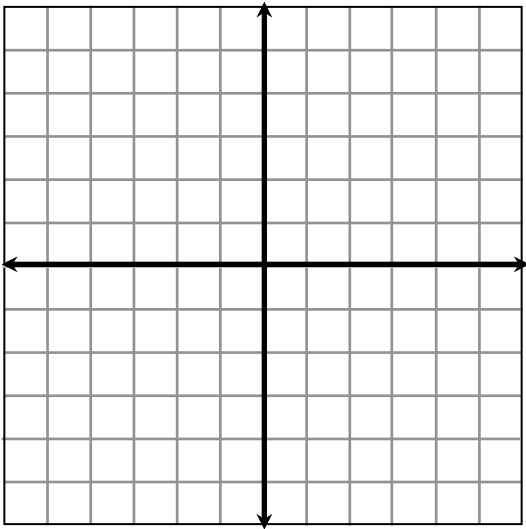
24.

(a) For $f(x) = 2x + 3$, find $f(4)$.

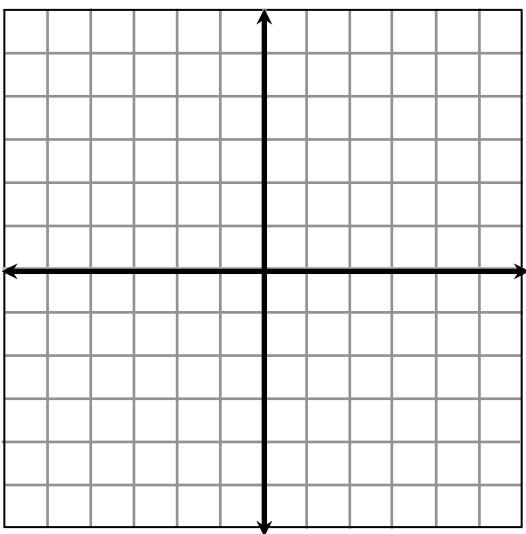
(b) For $f(x) = (x - 1)^2$, find $f(-5)$.

25.

(a) Graph $y < -3x + 1$



(b) Graph $y \geq 1$



Addition Table

+	1	2	3	4	5	6	7	8	9	10
1	2	3	4	5	6	7	8	9	10	11
2	3	4	5	6	7	8	9	10	11	12
3	4	5	6	7	8	9	10	11	12	13
4	5	6	7	8	9	10	11	12	13	14
5	6	7	8	9	10	11	12	13	14	15
6	7	8	9	10	11	12	13	14	15	16
7	8	9	10	11	12	13	14	15	16	17
8	9	10	11	12	13	14	15	16	17	18
9	10	11	12	13	14	15	16	17	18	19
10	11	12	13	14	15	16	17	18	19	20

Multiplication Table

×	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50
6	6	12	18	24	30	36	42	48	54	60
7	7	14	21	28	35	42	49	56	63	70
8	8	16	24	32	40	48	56	64	72	80
9	9	18	27	36	45	54	63	72	81	90
10	10	20	30	40	50	60	70	80	90	100

Rules for Signed Numbers

<i>Addition</i>				<i>Subtraction</i>			
Positive	+	Positive	= Positive	$A - B = A + (-B)$			
POSITIVE	+	Negative	= Positive				
Positive	+	NEGATIVE	= Negative				
Negative	+	Negative	= Negative				
Numbers in bold, capital letters have a greater magnitude than nonbold, lower case partner number.							
<i>Multiplication</i>				<i>Division</i>			
Positive	×	Positive	= Positive	Positive	÷	Positive	= Positive
Positive	×	Negative	= Negative	Positive	÷	Negative	= Negative
Negative	×	Positive	= Negative	Negative	÷	Positive	= Negative
Negative	×	Negative	= Positive	Negative	÷	Negative	= Positive

Rules for Fractions For any real numbers, $a, b, c,$ and $d, b \neq 0, c \neq 0,$ and $d \neq 0$

$$\frac{a}{c} + \frac{b}{c} = \frac{a+b}{c} \qquad \frac{a}{c} - \frac{b}{c} = \frac{a-b}{c} \qquad \frac{a}{b} \cdot \frac{c}{d} = \frac{ac}{bd} \qquad \frac{a}{b} \div \frac{c}{d} = \frac{a}{b} \cdot \frac{d}{c} = \frac{ad}{bc}$$

Distributive Property

For any real numbers, $a, b, c,$ and d

$$a(b + c) = ab + ac$$