

Chapter 2 Review

Name: _____

Please show all work.

In 1: A) Graph the relation. B) Then circle if it is a function or not.

1.

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

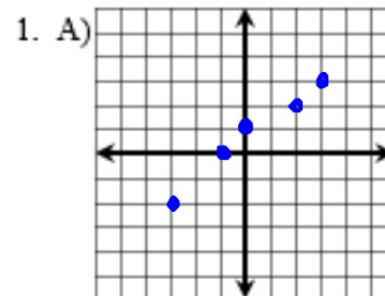
In 2, evaluate the function for the given value of x.

2. $f(x) = x^2 + 5x + 1$; $f(-1)$ $f(-1) = (-1)^2 + 5(-1) + 1$
 $1 + -5 + 1$

3. Write an equation of the function $y = x$ that was translated 3 units right and 2 units down.

(-2)

(-3)



B) YES or NO

2. -3

3. $y = (x - 3) - 2$

6.

x-int ($y=0$)

$$4x - 0 = 8$$

$$4x = 8$$

$$\frac{4x}{4} = \frac{8}{4}$$

$$x = 2$$

$$(2, 0)$$

y-int $x=0$

$$4(0) - y = 8$$

$$-y = 8$$

$$\frac{-y}{-1} = \frac{8}{-1}$$

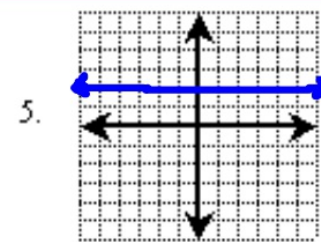
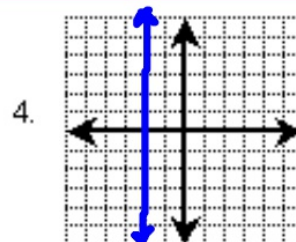
$$y = -8$$

$$(0, -8)$$

In 4-7, graph the equation.

4. $x = -2$

5. $y = 2$



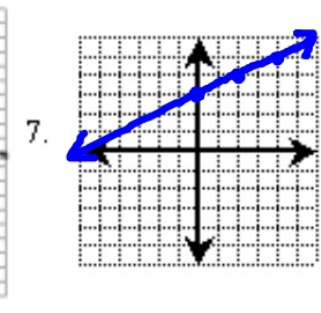
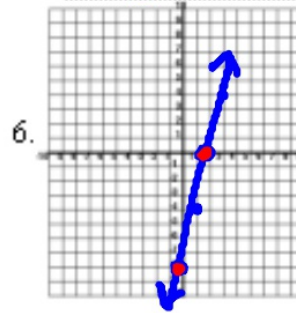
6. $4x - y = 8$

$$\frac{-4x}{-1} = \frac{-4x + 8}{-1}$$

$$-y = -4x + 8$$

$$y = 4x - 8$$

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



In 8-11, write the equation of the line with the given properties.

8. slope = $\frac{1}{2}$ x-intercept = 2

$$y = mx + b$$

In 8-11, write the equation of the line with the given properties.

8. slope = $\frac{1}{2}$, y-intercept = 2

8. $y = \frac{1}{2}x + 2$

9. points: $(3, 4), (-1, 0)$

$$m = \frac{0 - 4}{-1 - 3} = \frac{-4}{-4} = 1$$

$$y - y_1 = m(x - x_1)$$

$$y - 4 = 1(x - 3)$$

$$\begin{array}{r} y - 4 = x - 3 \\ +4 \quad \quad +4 \\ \hline y = x + 1 \end{array}$$

9. $y = x + 1$

10. Write the equation of the line that passes through $(2, 1)$ and is parallel to the line $y = -4x + 6$.

$$y - 1 = -4(x - 2)$$

$$\begin{array}{r} y - 1 = -4x + 8 \\ +1 \quad \quad +1 \\ \hline y = -4x + 9 \end{array}$$

$$y = -4x + 9$$

10. $y = -4x + 9$

11. Write the equation of the line that passes through $(4, 1)$ and is perpendicular to the line $y = \frac{1}{2}x - 1$.

$m = -2$

$$y - 1 = -2(x - 4)$$

$$\begin{array}{r} y - 1 = -2x + 8 \\ +1 \quad \quad +1 \\ \hline y = -2x + 9 \end{array}$$

$$y = -2x + 9$$

11. $y = -2x + 9$

In 12-13, graph the inequality.

12. $y \geq 2x + 1$

$0 \geq 2(0) + 1?$

$0 \neq 1$

No!

13. $y < 2|x - 4| - 3$

(4, 3)

$0 < 2|0 - 4| - 3?$

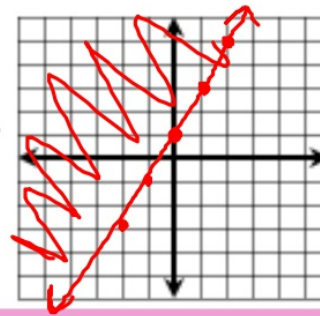
$0 < 2|-4| - 3?$

$0 < 2(4) - 3?$

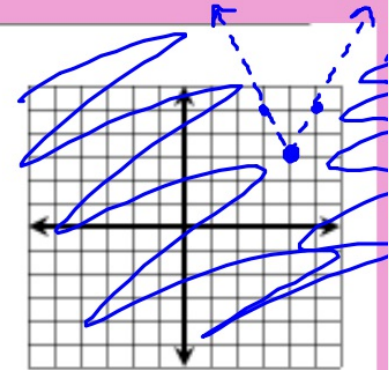
$0 < 8 - 3$

$0 < 5 \checkmark$

12.



13.



Tell whether the given ordered pair is a solution the in inequality.

14. $y < 3x - 4$: $(2, -5)$

$-5 < 3(2) - 4$?
 $-5 < 6 - 4$
 $-5 < 2$ ✓

Yes, $(2, -5)$
is a
solution!

15. $y \geq |x| - 3$: $(4, -8)$

$-8 \geq |4| - 3$?
 $-8 \geq 4 - 3$?
 $-8 \geq 1$

No, $(4, -8)$ is
NOT a
solution

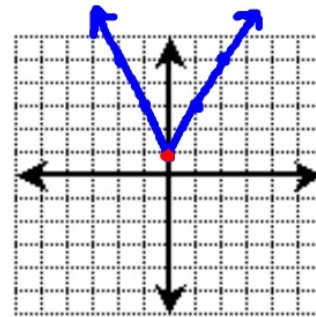
14. Yes!
15. No!

In 15-16, graph the following absolute value equations.

16. $y = 2|x| + 1$ $(h, k) = (0, 1)$
 $a = 2$

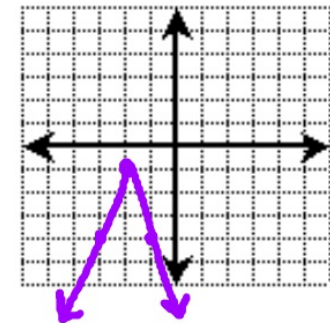
17. $y = -3|x + 2| - 1$ $(h, k) = (-2, -1)$
 $a = -3$

16.



17.

17.



18. Graph the ~~piecewise~~ function:



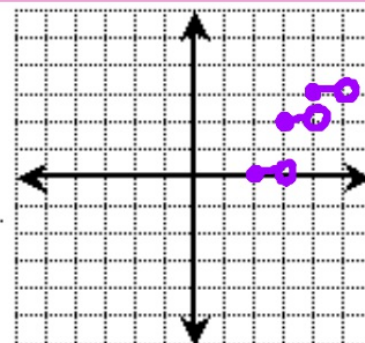
$$f(x) = \begin{cases} 0, & \text{if } 4 \leq x < 6 \\ 4, & \text{if } 6 \leq x < 8 \\ 6 & \text{if } 8 \leq x < 10 \end{cases}$$

19. Graph the ~~step~~ function.

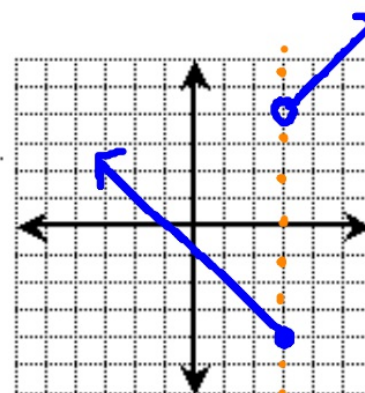
$$f(x) = \begin{cases} x+1 & \text{if } x > 3 \\ -x-1 & \text{if } x \leq 3 \end{cases}$$

$x=3$

18.



19.



20. The Movies: The Grand Haven 9 is selling popcorn "c" for \$4 a bucket and churros "s" for \$3 a cup. You have \$20 to spend. Write a

20. Use the table and graph to write and find the equation of the line (slope - intercept form).

21. Estimate for the year 2002. $(x=18)$ $y = .5(18) + 8.4$
 $y = 9 + 8.4 = 17.4$



20. $y = .5x + 8.4$

21. 17.4 billion

**U.S. Health Expenditures
Drug and Other Medical
Nondurables**

Year	Expenditures (billions of dollars)
1995	8.9 ✓
1996	9.4 ✓
1997	10.0
1998	10.6

Source: *The World Almanac and Book of Facts, 2001*

$$m = \frac{9.4 - 8.9}{2 - 1} = .5$$

$$y - 8.9 = .5(x - 1)$$

$$y - 8.9 = .5x - .5$$

$$y = .5x + 8.4$$

$$y = .5x + 8.4$$

