

Algebra 1 Unit Review

-Linear Equations-

Name Key

Date _____

1. Which point is on the graph $y = 2 - x$?

- ~~A (2, 4)~~
- ~~B (5, 3)~~
- ~~C (2, -4)~~
- D (5, -3)**

$4 \neq 2 - 2$
 $5 \neq 2 - 3$
 $-4 \neq 2 - 2$
 $-3 = 2 - 5 \checkmark$

2. Is the point (5, 2) a solution to $2y + x = 9$?

Circle one: **YES**

NO

$2(2) + 5 = 9$
 $4 + 5 = 9$
 $9 \neq 9$

Find the x and y-intercepts of the following equations:

3. $y = 3x - 12$

- (4, 0)
- (0, -12)

X-int $y = 0$ $0 = 3x - 12$ $12 = 3x$ $x = 4$	Y-int $x = 0$ $y = 3(0) - 12$ $y = 0 - 12$ $y = -12$
---	--

4. $8x + 7 = y$

- (-7/8, 0)
- (0, 7)

X-int $y = 0$ $8x + 7 = 0$ $8x = -7$ $x = -7/8$	Y-int $x = 0$ $8(0) + 7 = y$ $0 + 7 = y$ $y = 7$
---	--

5. What is the x-intercept of the line defined by $-2x + 3y = 12$?

- A 6
- B 4
- C -4
- D -6**

X-int $y = 0$ $-2x + 3(0) = 12$ $-2x + 0 = 12$ $-2x = 12$ $x = -6$

Create a table of ordered pairs for this equation:

6. $y = 5 - 2x$

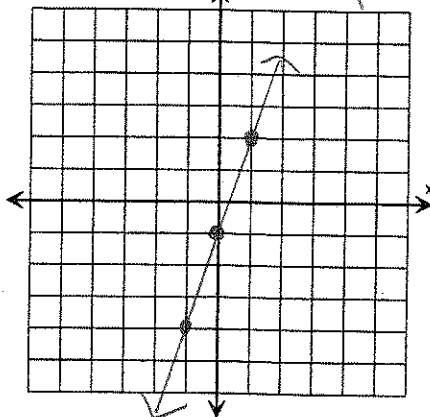
x	y
-1	7
0	5
-1	3

$y = 5 - 2(-1)$
 $5 + 2$
 $y = 7$
 $y = 5 - 2(1)$
 $y = 5 - 2$
 $y = 3$
 $y = 5 - 2(0)$
 $y = 5 - 0$
 $y = 5$

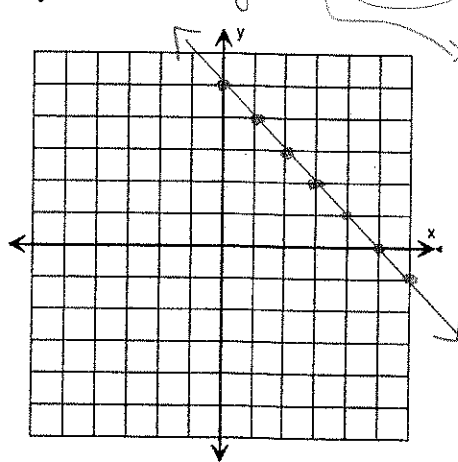
Choose any #s

Graph the following equations by using ANY method

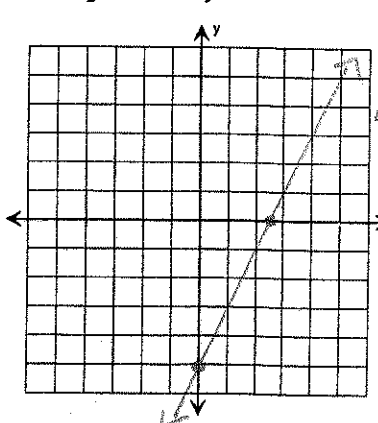
7. $y = 3x - 1$
 y-intercept
 slope $\frac{3}{1}$
 up 3 right 1



8. $y = 5 - x \rightarrow y = -x + 5$



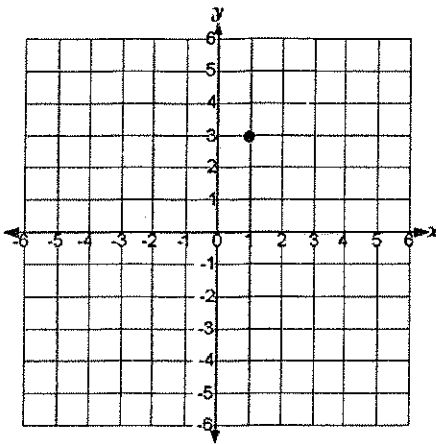
9. Graph $4x + 2y = 10$



X-int $y = 0$ $4x + 2(0) = 10$ $4x = 10$ $x = 2.5$	Y-int $x = 0$ $4(0) + 2y = 10$ $2y = 10$ $y = 5$
--	--

(2.5, 0) (0, 5)

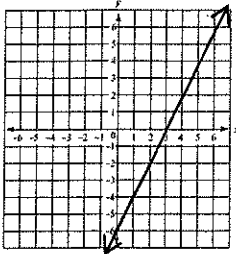
10. What is the ordered pair for the point graphed below?



- A (-1, -3)
- B (-1, 3)
- C (1, 3)**
- D (3, 1)

(x, y)

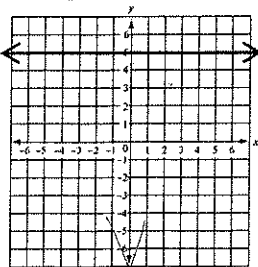
11. What is the x-intercept of the graph?



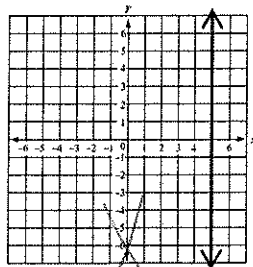
(3, 0)

- A (-12, 0)
- B (-6, 0)
- C (3, 0)**
- D (6, 0)

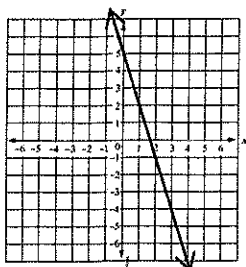
12. Which of the following is the graph of $y = 3x + 5$? Positive ↗



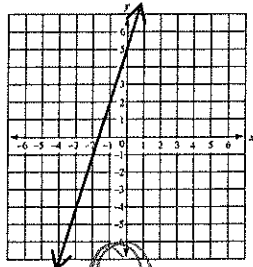
A



C



B



D

13. Write the equation of the line that passes through the point (1, 2) and has a slope of 3.

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

$$y - 2 = 3(x - 1)$$

$$y - 2 = 3x - 3$$

$$y = 3x - 1$$

14. Write the equation of the line that passes through (0, 8) and has a slope of -1.

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

$$y - 8 = -1(x - 0)$$

$$y - 8 = -x + 0$$

$$y = -x + 8$$

15.

x	y
-2	7
+2 0	9 +2
+2 2	11 +2

$\frac{\Delta y}{\Delta x} = \frac{2}{2} = 1$

Which of the following equations was used to generate the table above?

- ~~A $y = -x + 9$~~
- B $y = x + 7$
- ~~C $y = -x - 2$~~
- D $y = x + 9$**

$0 + 7 = 7$

$0 + 9 = 9$

$(9, 9)$
 $(-2, 7) \quad -2 + 9 = 7$

16. Write an equation of the line that created this table of ordered pairs:

x	y
1	4 +6
+2 3	10 +6
+2 5	16 +6

$\frac{\Delta y}{\Delta x} = \frac{6}{2} = 3$

$$y = 3x + 1$$

17. What is the equation of the line that created this table:

x	y
1	9
4	3
7	-3

- A $y = -2x + 11$**
- B $y = 2x - 5$
- C $y = 2x + 1$
- D $y = -2x + 5$

$9 = 9$ ✓
 $9 = -2 + 11$
 $9 = -2(1) + 11$
 $9 = 2(1) - 5$ 9 ≠ -3
 $9 = 2(1) + 1$
 $9 = -2(1) + 5$
 $-2 + 5 = 3$
 $9 \neq 3$

18. Which of the following equations below represents the line that passes through (1, 10) and (0, 7)?

- A $y = x + 9$
- B $y = 3x + 2$
- C $y = 3x + 7$
- D $y = -3x + 13$

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{10 - 7}{1 - 0} = \frac{3}{1} = 3$$

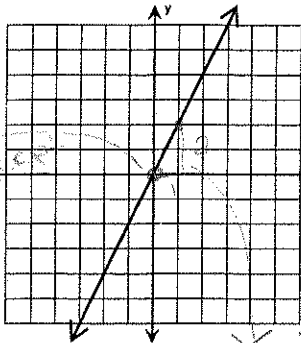
$$y - y_1 = m(x - x_1)$$

$$y - 10 = 3(x - 1)$$

$$y - 10 = 3x - 3$$

$$y = 3x + 7$$

19.



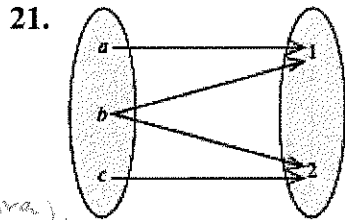
Which equation *best* represents the graph to the left?

- A $y = x$
- B $y = 2x$
- C $y = x + 2$
- D $y = 2x + 2$

slope $m = \frac{2}{1} = 2$

For questions 20 & 21, write the relation as a set of ordered pairs, b. identify the domain, and c. identify the range.

Parent, x	Child, y
Kevin	Katie
Kevin	Kira
Kathleen	Katie
Kathleen	Kira

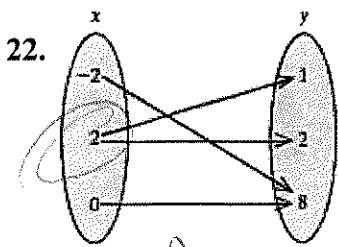


- a.) $(a, 1), (b, 1), (b, 2), (c, 2)$
- b.) $D = \{a, b, c\}$
- c.) $R = \{1, 2\}$

- a.) $(Kevin, Katie), (Kevin, Kira), (Kathleen, Katie), (Kathleen, Kira)$

- b.) $D = \{Kevin, Kathleen\}$ DO NOT REPEAT!
- c.) $R = \{Katie, Kira\}$

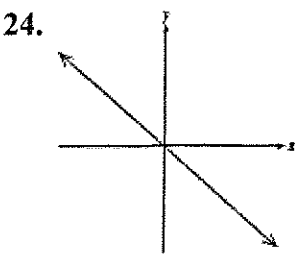
In questions 22-25, determine if the relation defines y as a function of x .



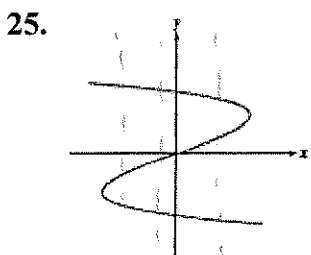
NO

23. $\{(1, 2), (3, 4), (5, 4), (-9, 3)\}$

yes



yes



NO

Evaluate the following functions.

26. $g(x) = 3x - 3$; Find $g(-6)$

$$3(-6) - 3$$

$$-18 - 3$$

$$g(-6) = -21$$

27. $f(x) = 4x - 5$; Find $f(x - 2)$

$$4(x - 2) - 5$$

$$4x - 8 - 5$$

$$f(x - 2) = 4x - 13$$

28. $h(n) = -2n^2 + 4$; Find $h(4)$

$$-2(4^2) + 4$$

$$-2(16) + 4$$

$$-32 + 4$$

$$h(4) = -28$$

29. $f(x) = x^2 - 3x$; Find $f(8)$

$$8^2 - 3(8)$$

$$64 - 24$$

$$f(8) = 40$$

