ALGEBRA 1
CHAPTER 4 REVIEW

Name KEY
Date _____ Per____

1. Draw a graph indicating the temperature of the water in a tea kettle. The water is initially room temperature, then heated up to boiling for a minute, then the kettle is taken off of the stove. Be sure to label both axes with a title.

2. Determine it the relation in the table is "linear" or "not linear."
If linear, write the equation represented.

a.

x	y	
-2	-1	
-1	4	+5
0	9	+5
1	14	+5
2	19	+5

(+1, +1, +1, +1)

linear; $y = 5x + 9$

b.

x	y	
-4	-1	
-2	4	+5
0	9	+5
2	14	+5
4	19	+5

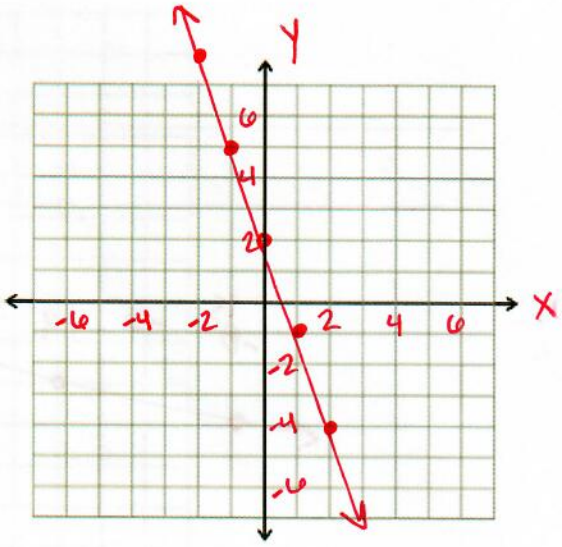
(+2, +2, +2, +2)

$y = \frac{5}{2}x + 9$

In problem 3, graph each function rule. Be sure to label axes and label units!

3. $y = -3x + 2$

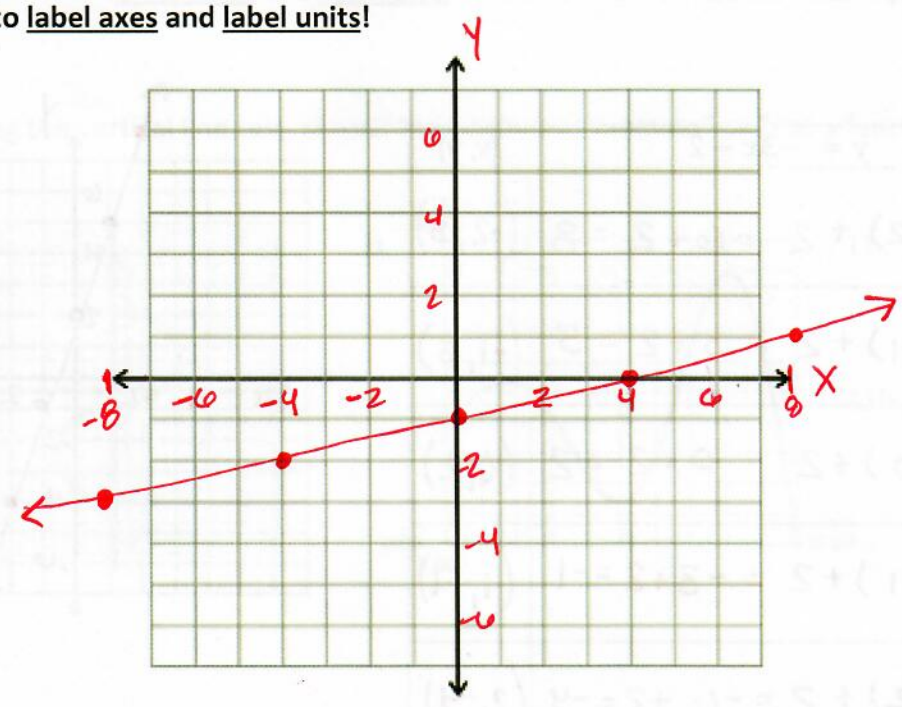
x	$y = -3x + 2$	(x, y)
-2	$-3(-2) + 2 = 6 + 2 = 8$	(-2, 8)
-1	$-3(-1) + 2 = 3 + 2 = 5$	(-1, 5)
0	$-3(0) + 2 = 0 + 2 = 2$	(0, 2)
1	$-3(1) + 2 = -3 + 2 = -1$	(1, -1)
2	$-3(2) + 2 = -6 + 2 = -4$	(2, -4)



4. Create a table of values and graph the equation $y = -\frac{1}{4}x - 1$

x	$y = \frac{1}{4}x - 1$	(x, y)
-8	$\frac{1}{4}(-8) - 1 = -2 - 1 = -3$	$(-8, -3)$
-4	$\frac{1}{4}(-4) - 1 = -1 - 1 = -2$	$(-4, -2)$
0	$\frac{1}{4}(0) - 1 = 0 - 1 = -1$	$(0, -1)$
4	$\frac{1}{4}(4) - 1 = 1 - 1 = 0$	$(4, 0)$
8	$\frac{1}{4}(8) - 1 = 2 - 1 = 1$	$(8, 1)$

Be sure to label axes and label units!

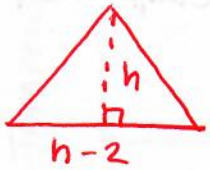


In 5 and 6, write a function that represents each situation.

5. Eight less half a number x is twelve. 5. $8 - \frac{1}{2}x = 12$

6. The quotient of a number m and two equals twelve. 6. $\frac{m}{2} = 12$

7. Write a function rule for the area of a triangle whose base is 2 inches less than its height.



$A = \frac{1}{2}bh$

a. Define a variable. let h = height of the triangle

b. Write an equation to represent the area of the triangle. $A = \frac{1}{2}(h-2)h$

c. Find the area of the triangle if the height is 6 inches.

$h = 6$ in

$A = \frac{1}{2}(h-2)(h)$

$A = \frac{1}{2}(6-2)(6)$

$A = \frac{1}{2}(4)(6)$

$A = (2)(6)$

$A = 12 \text{ in}^2$

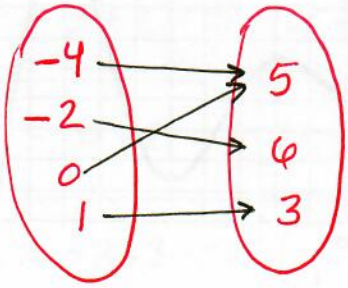
The area of the triangle is 12 in^2.

8. Given the set of numbers $\{(-4,5), (-2,6), (0,5), (1,3)\}$:

a. State the domain: $\{-4, -2, 0, 1\}$

State the range: $\{5, 6, 3\}$

b. Create a mapping:



Determine if the relation is a "function" or "not a function." Function

9. *If* $f(x) = -x^2 + 5$, *find* $f(-2)$

9. 1

$f(-2) = -(-2)^2 + 5$

$= -(4) + 5$

$= -4 + 5$

$= 1$

Note: domain value: -2

range value: 1

ordered pair: (-2, 1)

10. *If* $p(m) = \frac{3}{4}m + 5$, *find* $p(-8)$.

10. -1

$p(-8) = \frac{3}{4}(-8) + 5$

$= -6 + 5$

$= -1$

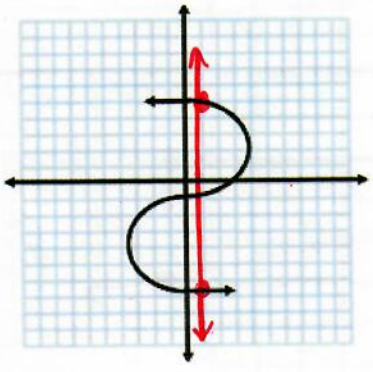
Note: domain value: -8

range value: -1

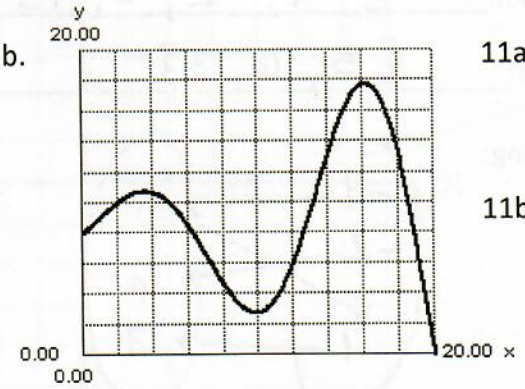
ordered pair: (-8, -1)

11. Using the vertical line test, state if the graph is a "function" or "not a function."

a.



b.



11a. Not a function

11b. Function