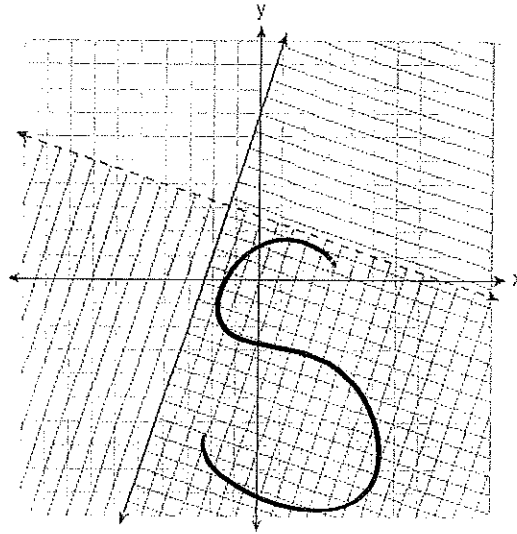


Name Henry

Date _____

Common Core Algebra 1 Review Packet #2

1. Which ordered pair is in the solution set of the system of linear inequalities graphed below?



(1) (1, -4)

(2) (-5, 7)

(3) (5, 3)

(4) (-7, -2)

2. Using the substitution method, Ken solves the following system of equations algebraically.

$$\begin{aligned} 2x - y &= 5 & \rightarrow & \quad 2x - 5 = y \\ 3x + 2y &= -3 \end{aligned}$$

Which equivalent equation could Ken use?

$$3x + 2(2x - 5) = -3$$

(1) $3x + 2(2x - 5) = -3$

(3) $3\left(y + \frac{5}{2}\right) + 2y = -3$

(2) $3x + 2(5 - 2x) = -3$

(4) $3\left(\frac{5}{2} - y\right) + 2y = -3$

3. Which ordered pair is in the solution set of the system of inequalities $y \leq 3x + 1$ and $x - y > 1$?

(1) (-1, -2)

(2) (2, -1)

(3) (1, 2)

(4) (-1, 2)

4. If $h(x) = \begin{cases} 4x, & x < -1 \\ 2, & -1 \leq x \leq 1 \\ x, & x > 1 \end{cases}$, find $h(-3)$.

$4(-3)$

- (1) -3 (2) 2 (3) 12 (4) -12

5. Labor at the car repair shop can be represented by the function:

Total charge for repairs = $\begin{cases} 150, & 0 < h \leq 1 \\ 150 + 80(h-1), & h > 1 \end{cases}$ *3 is in this piece's domain*

$150 + 80(3-1)$

If h represents the number of hours worked, what is the charge for a 3 hour car repair?

- (1) \$150 (2) \$230 (3) \$310 (4) \$390

6. The value of the x-intercept for the graph of $5x + 4y = 40$ is

- (1) 10 (2) $\frac{5}{4}$ (3) $-\frac{5}{4}$ (4) 8

$5x = 40$
 $x = 8$

7. What is the range of $f(x) = |x + 2| - 4$

- 1) $0 \leq y < \infty$ 2) $0 \leq x < \infty$
 (3) $-4 \leq y < \infty$ 4) $-4 \leq x < \infty$

$a|x-h|+k$

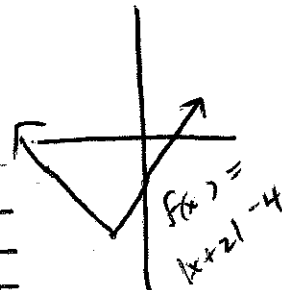
(h,k) vertex

$(-2, -4)$ make sure you put $x = -2$ in the

middle of your table to see the pattern

replace y with zero
vocab Range means set of y values

x	$ x+2 - 4$
-5	-1
-4	-2
-3	-3
-2	-4
-1	-3
0	-2
1	-1
2	0



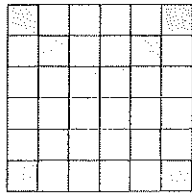
8. The diagrams below represent the first three terms of a sequence.



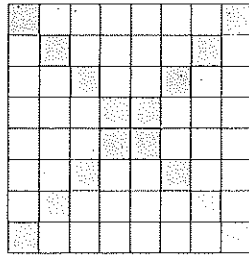
$$a_1 = 12$$

$$a_2 = 16$$

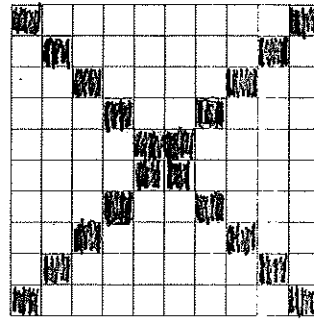
$$a_3 = 20$$



Term 1



Term 2



Term 3

- (1) $a_n = 4n + 12$ (2) $a_n = 4n + 8$ (3) $a_n = 4n + 4$ (4) $a_n = 4n + 2$

9. If a sequence is defined recursively by $f(0) = 2$ and $f(n + 1) = -2f(n) + 3$ for $n \geq 0$; then $f(2)$ is equal to:

- (1) 1 (2) -11 (3) 5 (4) 17

$$f(1) = -2f(0) + 3$$

$$= -2(2) + 3$$

$$= -1$$

$$f(2) = -2f(1) + 3$$

$$= -2(-1) + 3$$

$$= 2 + 3$$

$$= 5$$

10. Which property of equality is shown below?

If: $-19 - u = t$

Then: $\frac{-19 - u}{v} = \frac{t}{v}$

- (1) addition property of equality (2) subtraction property of equality
- (3) division property of equality (4) multiplication property of equality

11. Which property of equality is shown below?

If: $66 = b + -32$

Then: $66 + 70 = b + -32 + 70$

- (1) addition property of equality (2) subtraction property of equality
- (3) division property of equality (4) multiplication property of equality

12. Given $3x - ax + 4 \leq 12$, determine the smallest integer value of a when $x = 2$

$$3(2) - 2a + 4 \leq 12$$

$$6 - 2a + 4 \leq 12$$

$$10 - 2a \leq 12$$

$$\begin{array}{r} 10 - 2a \leq 12 \\ -10 \quad -10 \\ \hline -2a \leq 2 \\ \frac{-2a}{-2} \leq \frac{2}{-2} \end{array}$$

$a \geq -1$
 ∴ Smallest integer value of a is -1 .

13. Given $h(x) = -2x + 7$, If $h(x) = 4$ find the value of x .

$$\begin{array}{r} 4 = -2x + 7 \\ -7 \quad -7 \\ \hline \end{array}$$

$$\frac{-3}{-2} = \frac{-2x}{-2} \quad x = 1.5$$

↓ the output is 4

→ find the input

14. Given $f(x) = |x + 6| - 2$, evaluate $f(-8) + f(2)$

$$f(-8) = |-8 + 6| - 2 = |-2| - 2 = 2 - 2 = 0$$

$$f(2) = |2 + 6| - 2 = |8| - 2 = 8 - 2 = 6$$

$$\therefore f(-8) + f(2) = 0 + 6 = \boxed{6}$$

15. On the grid below, solve the system of equations graphically for x and y .

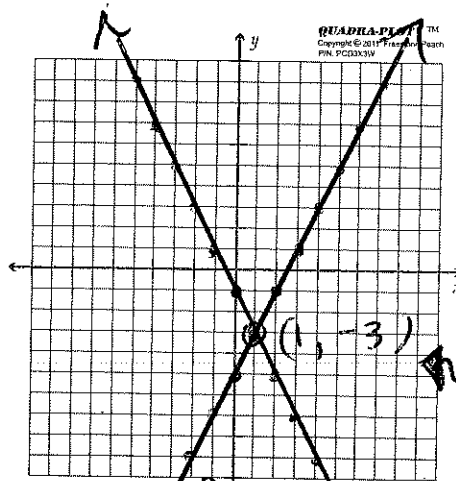
$$4x - 2y = 10$$

$$y = -2x - 1$$

$$\begin{array}{r} 4x - 2y = 10 \\ -4x \quad -4x \\ \hline \end{array}$$

$$\begin{array}{r} -2y = -4x + 10 \\ \frac{-2y}{-2} = \frac{-4x}{-2} + \frac{10}{-2} \end{array}$$

$$y = 2x - 5$$



clearly indicate your solution

$$4x - 2y = 10 \quad y = -2x - 1$$

$$a|x-h|+K$$

16. If $f(x) = |x - 1| - 3$ is translated up 3 units and left 4 units what is the resulting equation?

$$h = 1 \quad K = -3$$

left 4 subtract 4 from h

up 3 add 3 to K

$$\text{New } h = 1 - 4$$

$$K = -3 + 3$$

Resulting Eq is

$$h = -3$$

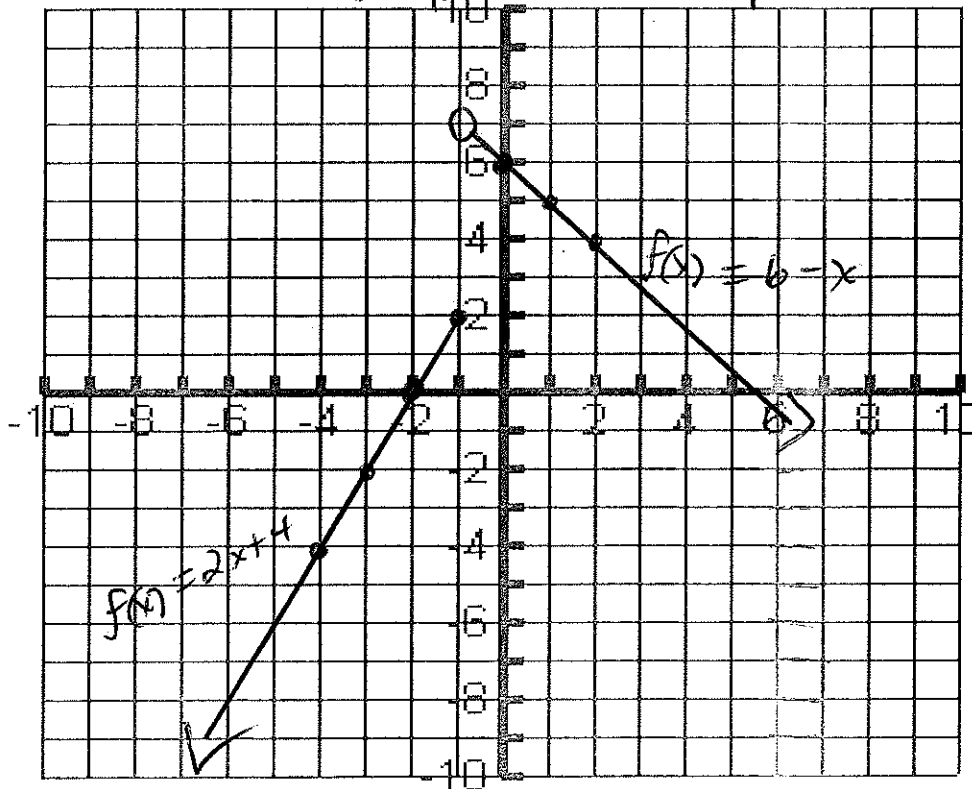
$$K = 0$$

17. Graph the following piecewise defined function on the axes provided $y = |x - 3| + 0$

$$f(x) = \begin{cases} 2x + 4, & x \leq -1 \\ 6 - x, & x > -1 \end{cases}$$

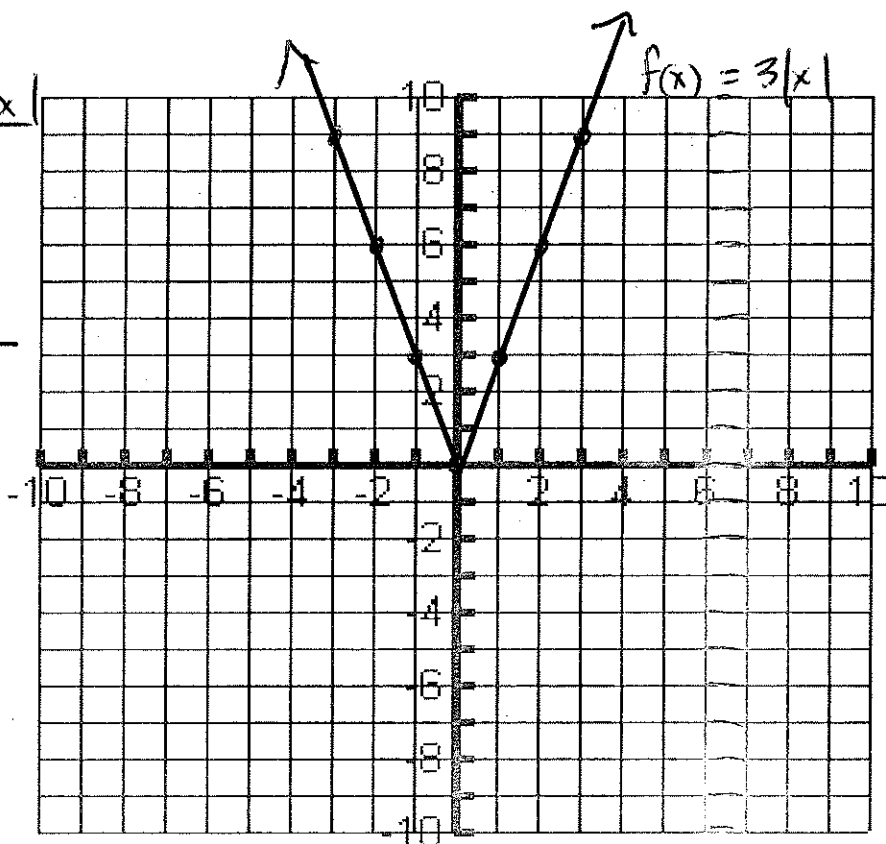
x	6-x	Circle
-1	7	○
0	6	●
1	5	●
2	4	●

x	2x+4	Circle
-1	2	●
-2	0	●
-3	-2	●
-4	-4	●



18. On the set of axes below, graph $f(x) = 3|x|$

x	$f(x) = 3 x $
-3	9
-2	6
-1	3
0	0
1	3
2	6
3	9



$f = a f(x-h) + k$

If $g(x) = f(x) - 3$, how is the graph of $f(x)$ translated to form the graph of $g(x)$?

$k = -3$ $f(x)$ is translated down 3

If $h(x) = f(x - 1)$, how is the graph of $f(x)$ translated to form the graph of $h(x)$?

$h = 1$ $f(x)$ is translated right 1

If $k(x) = -f(x)$, how is the graph of $f(x)$ translated to form the graph of $k(x)$?

$a = -1$ The graph of $f(x)$ is reflected over the x-axis