Review for Test #5 – Inequalities and Absolute Value

Name _____ Class _____

1.) What is the smallest integer value of x that satisfies the inequality $4x+2>2x-9$?

(A) -11 (B) -7 (C) -5 (D) -1

2.) Which number is *not* a member of the solution set of $-2x \le 13$?

(A) -6.4 (B) -6.5 (C) -6.3 (D) -6.7

3.) Which element is in the solution set of the inequality $8<3x-1$?

(A) 0 (B) 2 (C) 3 (D) 5

4.) If a is an integer, what is the solution set of $-4 \le x < 1$?

(A) $\{-4,-3,-2,-1,0\}$ (C) $\{-4,-3,-2,-1,0,1\}$

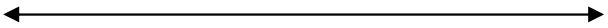
(B) $\{-3,-2,-1,0,1\}$ (D) $\{-3,-2,-1,0\}$

In 5 – 8, graph the double inequalities. Write the answer in interval notation.

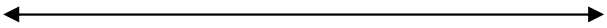
5.) $x>3$ and $x \le 7$

6.) $x<-9$ or $x>-5$

7.) $-2 \le x < 1$



8.) $x \ge 8$ and $x \le 3$

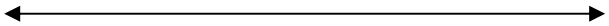


9.) Solve and graph the inequality $4x-2(x+1) \ge 3x$. Write your answer in interval notation.

10.) Jared went to the store and wanted to spend *at most* $48. He bought a DVD and a poster. The DVD cost eight more than four times the cost of the poster. How much did the DVD cost?

For 11 – 13, solve and graph the compound inequality. Write your answer in interval notation.

11.) $-5 < 3x + 7 \leq 28$



12.) $2y > y - 3$ or $3y < y + 6$

13.) $5 < -2x + 9 < 11$

For 14 – 16, solve the following absolute value equations.

14.) $|2x - 1| + 3 = 6$

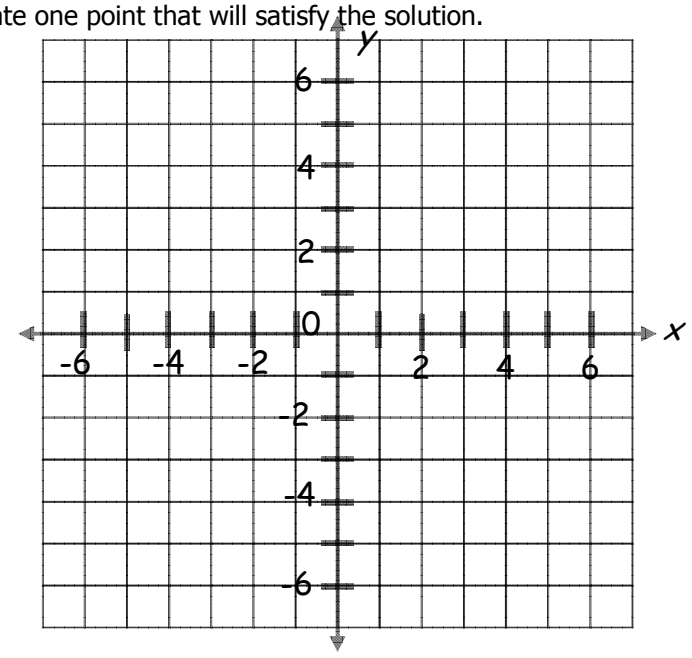
15.) $|5x+4|+10=2$

16.) $|x-7|=2x-2$

17.) Solve the following system of inequalities graphically. State one point that will satisfy the solution.

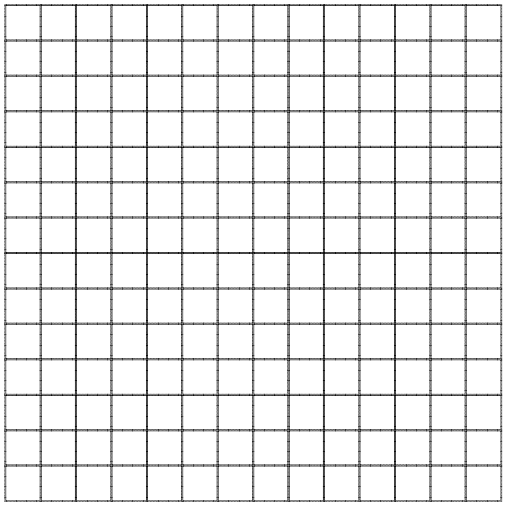
$2y < x+2$

$-3y \leq 3x-6$



18.) Emily babysits for $4 per hour. She also works as a tutor for $7 per hour. She is only allowed to work 13 hours per week. She wants to make at least $65. Write and graph a system of inequalities to represent this situation.

a.) Write and graph a system of inequalities to represent this situation.



b.) What is a possible combination of hours you can work at each job? Justify your answer.

Selected Answers (Check my website for a thorough answer key)

1.) C

2.) D

3.) D

4.) A

5.) $(3,7]$

6.) $(-\infty,-9)\cup(-5,\infty)$

7.) $[-2,1)$

8.) No solution

9.) $x \le -2$ $[2,\infty)$

10.) $40

11.) $-4 < x \le 7$ $(-3,7]$

12.) $y > -3$ or $y < 3$ $(-\infty,\infty)$

13.) $-1 < x < 2$ $(-1,2)$

14.) $\{2,-1\}$

15.) no solution

16.) $\{3\}$