Name_____ **Date**_____

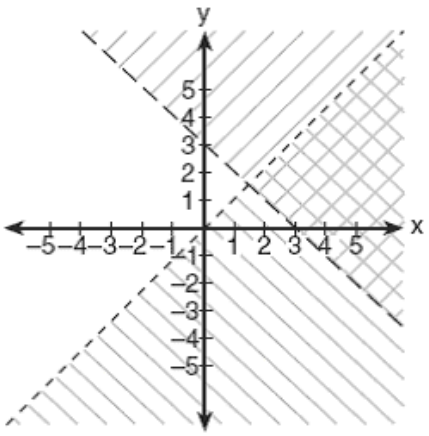
Mini-Quiz # 5 (Regents Review) **Algebra RH**

	My child has completed this entire assignment by Sunday night. Guardian Signature_____	25

Part I. Answer 11 questions in this part. Each correct answer will receive 1 credit. For each question, all necessary work should be shown to the right side of the problem. ***All questions marked*** **W** ***require appropriate work to be shown or no credit will be given - even if a correct answer is provided.*** **[11]**

1.	**2.**	**3.**	**4.**	**5.**	**6.**
7.	**8.**	**9.**	**10.**	**11.**	

1. Which ordered pair is in the solution set of the system of inequalities shown in the accompanying graph?



(1) (0,0) (2) (0,1)

(3) (1,5) (4) (3,2)

W 2. A coin appreciates in value each year by 4%. If the original value of the coin was $54, what is the closest estimate to how much the coin is worth after eight years?

(1) $34 (2) $40 (3) $57 (4) $74

3. What is the additive inverse of the expression $a - cd$?

(1) $cd - a$ (3) $-cd + a$

(2) $\frac{1}{cd - a}$ (4) $cd + a$

4. One factor of the expression $x^4 y^2 - 36$ is

(1) $xy - 6$ (3) $x^2 y - 18$

(2) $x^2 y + 6$ (4) $x^2 y^2 + 6$

5. A linear regression equation of best fit between a student's attendance and the degree of success in school is $\boldsymbol{h = -0.5x + 68.5}$. The correlation coefficient, $\boldsymbol{r}$, for these data would be

(1) $0 < r < 1$ (2) $-1 < r < 0$ (3) $r = 0$ (4) $r = -1$

W 6. Find the x-coordinate of the solution to the system: $y = 3x - 4$

$5x - y = 6$

(1) -1 (2) 0 (3) 1 (4) 2

W 7. In a geometric sequence, $a_1 = 0.3$ and $r = 3$. Find a_{12}, to the *nearest integer*.

(1) 53,144 (2) 159,432 (3) 177,147 (4) 531,441

W 8. When factored completely, the expression $x^4 - 16$ is equivalent to

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

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

W 9. The cost of a telephone call from Wilson, NY to East Meadow, NY is \$0.80 for the first three minutes plus \$0.15 for each *additional* minute. What is the greatest number of whole minutes of a telephone call if the call cannot exceed \$2.50?

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

W 10. Using the function $\boldsymbol{f(x) = -2x + 5}$, represent the value of $\boldsymbol{f(x - 1)}$ as a simplified polynomial expression.

(1) $-2x + 3$ (2) $x + 4$

(3) $-2x + 4$ (4) $-2x + 7$

11. Which table represents a linear function?

(1) Table 1

(2) Table 2

(3) Table 3

(4) Table 4

x	0	1	2	3	4
f(x)	4	5	6	7	8

Table 1

x	0	1	2	3	4
f(x)	0	2	8	18	32

Table 2

x	0	1	2	3	4
f(x)	0	1	4	9	16

Table 3

x	0	1	2	3	4
f(x)	-1	0	3	8	15

Table 4

Part II. Answer all questions in this part. Each correct answer will receive 3 credits. Clearly indicate all necessary steps, including appropriate formula substitutions, diagrams, graphs, charts, etc. For all questions in this part, a correct numerical answer with no work shown will receive only 1 credit. [6]

12. Safe-Driving Taxi Service charges $6 per pickup and $0.65 per mile. We'll Get You There Cab charges $2 per pickup and $0.90 per mile.

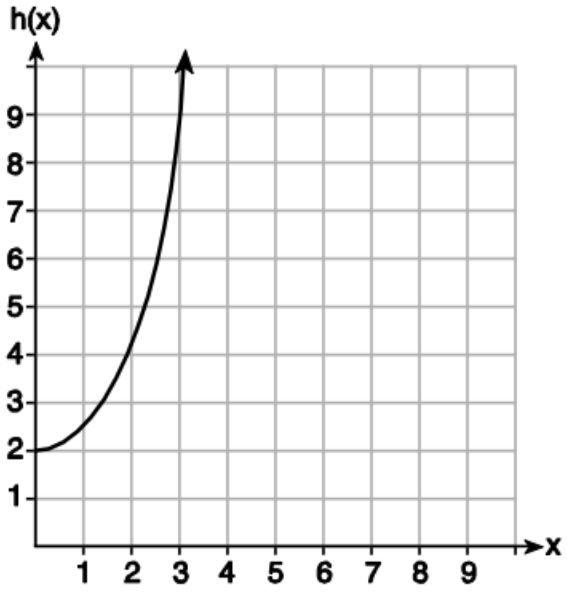
    A. Write an equation for each company that represents the amount of money charged, ***A***, for driving ***m*** miles with one pickup.

    Safe-Driving Taxi _____ ***We'll Get You There*** _____

    B. Find the number of miles a person can ride in which both companies will charge the same amount (*assume there is only one pick-up*).

13. Given the functions ***f*(x)** and ***h*(x)**. State which function has the greater *average rate of change* over the interval $1 \leq x \leq 3$. Justify your response.

x	f(x)
0	1
1	2
2	5
3	7



Part III. Answer both questions in this part. Each correct answer will receive 4 credits. Clearly indicate all necessary steps, including appropriate formula substitutions, diagrams, graphs, charts, etc. For all questions in this part, a correct numerical answer with no work shown will receive only 1 credit. [8]

14. Since 1990, fireworks usage nationwide has grown, as shown in the accompanying table, where ***t*** represents the number of years since 1990, and ***p*** represents the fireworks usage per year, in millions of pounds.

Number of Years Since 1990 (*t*)	0	2	4	6	7	8	9	11
Fireworks Usage per Year, in Millions of Pounds (*p*)	67.6	88.8	119.0	120.1	132.5	118.3	159.2	161.6

A. Find the equation of the linear regression model for this set of data, where ***t*** is the independent variable. Round values to *three decimal places*.

B. Based on this linear model, how many millions of pounds of fireworks would be used in the year 2008? Round your answer to the *nearest hundredth*.

15. Use the graph below to solve the system $y = 2(.5)^x$ and $2y = -3x + 5$.