Algebra 1 Review for Final

Name:_____ Score:_____/_____ Period: _____

Show all your work Check your answers w/ Key. Good Luck!

1.) Give an example of an equation in slope intercept form.

2.) Give an example of an equation in standard form.

3.) Write an algebraic expression for *7 times x squared minus the product of 4 and 7.*

4.) Write a verbal expression for $3n - 9/2t$.

5.) Evaluate $-2 + 6 \cdot 5 - 1$

6.) Evaluate $-6(9 - 12) + 32 \div 4$

7.) Evaluate $6k + m$ if $k = 2$ and $m = 6$.

8.) Evaluate $6 + 4 - 7 - (-2)$

9.) Evaluate $2\,(4^2 + 3) - 22 \div 11$

10.) Evaluate $5\frac{5}{6} + 6 + \frac{1}{6}$

11.) Evaluate $|\,3b - 5\,| + 6$ if $b = -3$

12.) Solve $\frac{3}{5}x = \frac{12}{15}$

13.) Solve $-3t + 8 = 5$

14.) Solve $\frac{k}{5} - 3 = -19$

15.) Solve $|\,c - 6\,| = 22$
(Hint: 2 cases)

16.) Solve the proportion $\frac{5}{12} = \frac{x}{36}$

17.) Solve $2(t + 2) = 5t - 7$

18.) What is the X-INTERCEPT of $y = -2x - 6$

19.) What is the Y-INTERCEPT of $y=-3x - 3$

For question 20-23, find the slope of each line described.

20.) the line through (1, -4) and (-2, 4)

21.) a vertical line

22.) a horizontal line

23.) What is the slope and the y-intercept of this linear equation $y = 3x + 1$

For problems: 24 –26, Write the equation in slope intercept form:

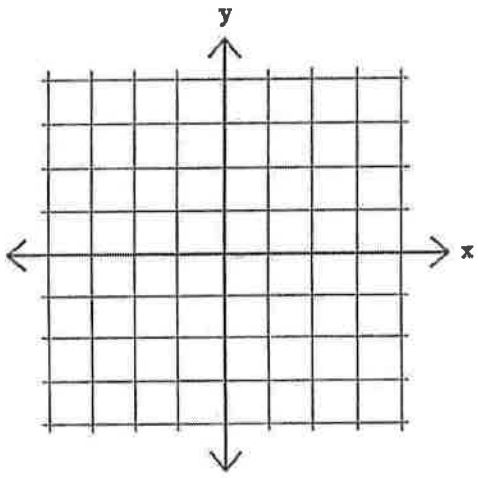
24.) Slope =1/3 and the point (3, -1)

25.) 2x-4y=12

26.) through the points (-1,2) and (1,-3)

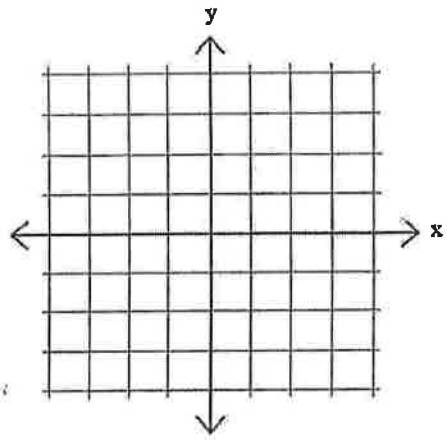
Graph the following and state the slope and the y-intercept:

27.) y=-3/4x+1



Slope =_____ Y-Intercept=_____

28.) y = 2x -2



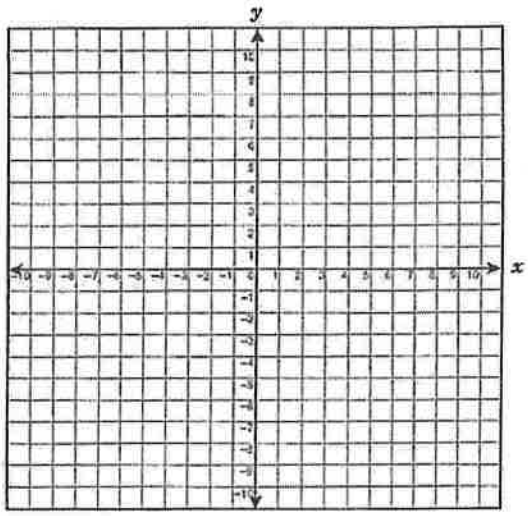
Slope=_____ Y-Intercept=_____

29.) With the points A(0,0) B(0,9) and C (8,0), draw the triangle and find the length of the hypotenuse using Pythagorean theorem, then find the distance of <u>each side</u> using the distance formula, and find the midpoint of all **three sides** using the midpoint formula. (You may use the formulas or a graph to answer)

Distance AB=_____ Midpoint AB=(___,___)

Distance BC=_____ Midpoint BC=(___,___)

Distance CA=_____ Midpoint CA=(___,___)



Simplify the radical

30) $\sqrt{91}$ 31) $\sqrt{27}$ 32) $4\sqrt{50}$ 33) $\sqrt{4}$

Perform the following operations and simplify all radicals

34) $(\sqrt{2})(\sqrt{5})$ 35) $(5\sqrt{2})(3\sqrt{6})$ 36) $\frac{\sqrt{2}}{\sqrt{6}}$ 37) $\frac{\sqrt{15}}{\sqrt{5}}$

38) $\left(\sqrt{8}\right)\left(\sqrt{\frac{1}{2}}\right)$ 39) $3\sqrt{20}+4\sqrt{5}$ 40) $2\sqrt{7}+7\sqrt{2}$ 41) $\sqrt{8}+\sqrt{8}$

42) $7\sqrt{6}+4\sqrt{3}-3\sqrt{6}+2\sqrt{2}$ 43) $\left(\sqrt{6}+\sqrt{2}\right)^2$ 44) $\left(\sqrt{8}-\sqrt{6}\right)^2$

Classify each as M (monomial), B (binomial), T (trinomial), P (polynomial), or C (constant). Then identify the leading coefficient, leading term, degree, and constant.

45)._____15

Leading Coefficient=_____

Leading Term=_____

Degree=_____

Constant=_____

46)._____ $x-2$

Leading Coefficient=_____

Leading Term=_____

Degree=_____

Constant=_____

47)._____ x^3+3x^2+2x-1

Leading Coefficient=_____

Leading Term=_____

Degree=_____

Constant=_____

Operations with monomial.

48). $5x^4\,y\mathcal{L}\,(5x^2\,\mathcal{L})$ 49). $-3(Gy^2\,z)^2$ 50). $\left(\frac{-8x^2z}{-9y}\right)^3$

51). $3xy^2+6xy^2-x^2y-10y+59y$ 52) $(x^2+2x-7)+(-2x^2+6x-3)$

53) $(2x-2)(6x+3)$ 54) $(2x+5)^2$

55) **Scientific Notation, Write in scientific notation** 300,000,000,000

56) **Scientific Notation, Write in standard form.** 9.203×10^{-9}

Factor each equation (just factor, don't solve).

57) $3x^6 - 15x^9$ 58) $12x^2u + 3x^2b + 28yu + 7yb$

Solve the equation, by factoring. (hint: factor and then set each piece = to 0 and solve)

59) $y = 2x^2 + 6x$ 60) $y = x^2 + 8x - 20$ 61) $y = 12x^3 - 21x^2 + 28x - 49$

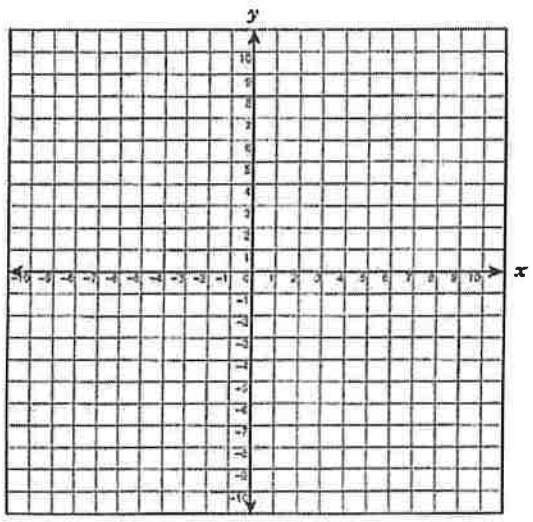
62) $y = 2x^2 + 12x + 16$ 63) $y = -x^2 - 4x - 3$ 64) $y = -12x^2 + 26x + 56$

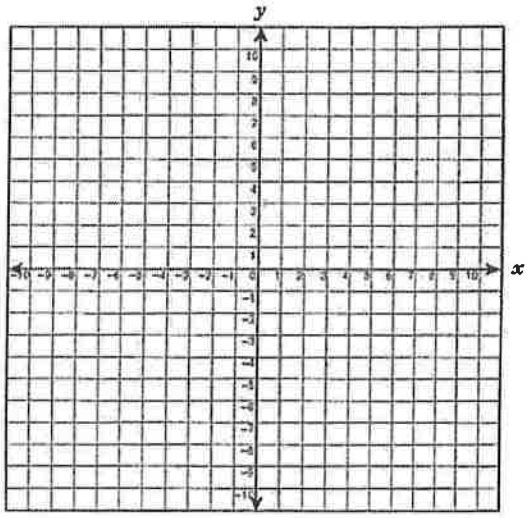
Solve by Pythagorean Theorem.

65) $y = -1x^2 - 2x + 15$ 66) $y = 18x^2 + 3x - 36$

Graph the Quadratic equation and label the axis of symmetry, vertex, and zeros.

67) $y = -x^2 - 4x + 5$ 68) $y = 2x^2 - 6x + 4$



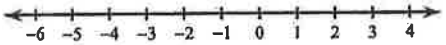


Chapter 5

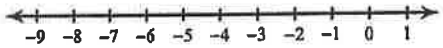
Solve each inequality and graph its solution.

69) $-5p + 2p \geq 12$

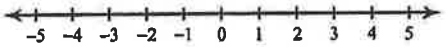
70) $-3(6n + 2) \leq -25 + n$



71) $-9(3 - 10k) < 9(-7 + 8k)$

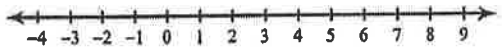


72) $-(8 + 9n) \leq 2(-8n + 3)$

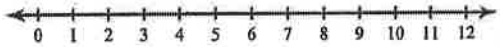


Solve each compound inequality and graph its solution.

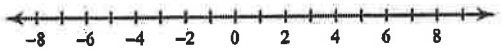
73) $\frac{m}{2} > 2$ or $m - 3 < -3$



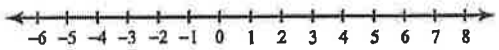
74) $\frac{b}{6} > 1$ or $\frac{b}{5} < 1$



75) $2p - 9 < -17$ or $4 - 4p < -12$

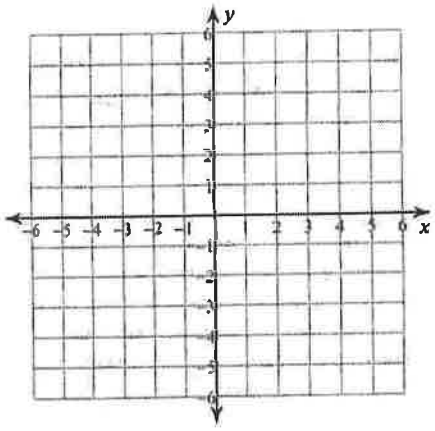


76) $8v - 12 < -28$ and $9v + 11 > 20$

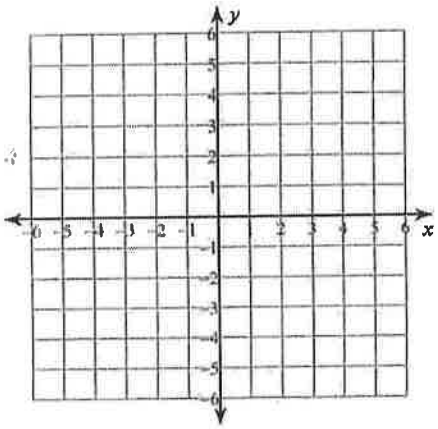


Sketch the graph of each linear inequality.

77) $y \geq -\frac{4}{5}x - 1$



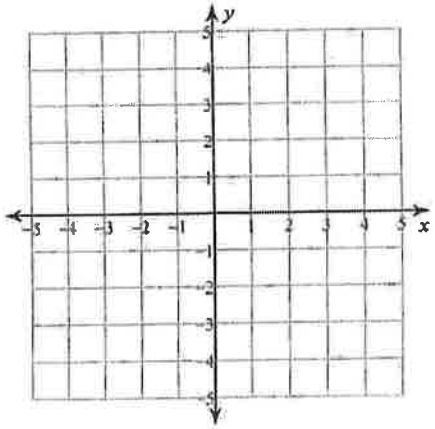
78) $3x - 2y < -6$



Sketch the solution to each system of inequalities.

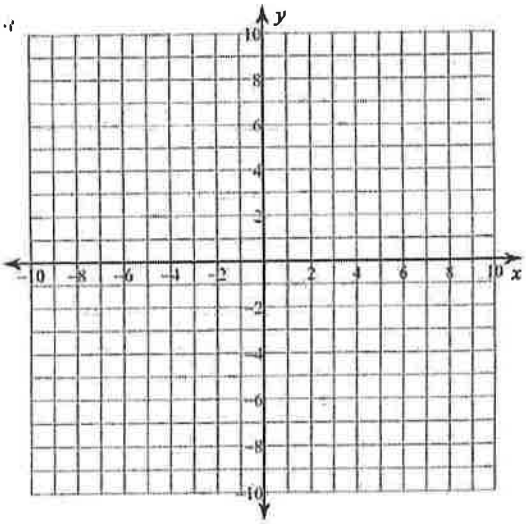
79) $x > 2$

$y < \frac{3}{2}x - 2$



80) $11x + 7y \leq 35$

$2x + 7y \leq -28$



Find the mode, median, range, standard deviation, and mean for each data set.

81) # Words in Book Titles

2	3	2	1	2	2	3	4
1	2	4	2	3	3	2	2
5							

Calculate the 5 data summary to find the box-and-wisker plot write them out with their titles (minimum, Q1, median, Q3, maximum) and then draw a box-and-whisker plot for the data set.

82) Life Expectancy

State	Years
South Dakota	74.3
Idaho	81.4
Utah	82.2
Tennessee	77.9
Michigan	79.2
Rhode Island	79.7
Arizona	79.3
New York	82.5

State	Years
South Carolina	78.3
Delaware	77
Maine	79.1
Oregon	82
New Mexico	77.7
New Hampshire	80.1
Oklahoma	78.2

Draw a histogram for each data set.

83) Shoe Size

10	10.5	8.5	6.5	8	5.5
9.5	6	8.5	9	8	7
7	7.5	8.5	6	7.5	

Round each data point and then draw a stem-and-leaf plot for the data set.

84) Minutes to Run 5km

32.5	38.5	27	36	27.6
37	37.8	36.8	45.9	25.8
25	32.8	33	46.4	20.1
33.4	19.2			

Solve each equation for the indicated variable.

85) $g = -1 - 4a$, for a

86) $\frac{k}{a} = v - w$, for a

87) $gca = a + b$, for a

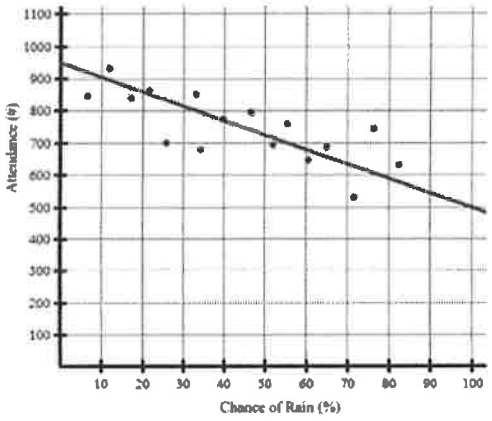
Solve each system by elimination, substitution or graphing.

88) $-5x + 6y = 4$
$-3x - 6y = 12$

89) $-7x - 8y = -9$
$x - 2y = -5$

90) $-10y - 20 - 10x = 0$
$-1 - \frac{1}{2}x - \frac{1}{2}y = 0$

91. The scatterplot shows the percent chance of rain and the attendance at a Six Flags amusement park. The equation of the best fit line is $y = -4.5x + 950$ and is shown graphed below.



a. Use a sentence to explain the meaning of the slope in this context.

b. The r-value for this best fit line model is -0.91. Explain what this means.

92.

Two Way Frequency Table

Type of Student	Study for Test: Yes	No	Maybe	Total
A Students	28	3	1	32
B Students	22	8	6	36
C Students	14	12	10	36
Total	64	23	17	104

a. What percent of students will study for the test?

b. What percent of the students are B students that will study?

c. How many B students surveyed said "Maybe" ?

d. How man C students were surveyed?

93.

Directions: Use the following sequence to answer (	
1, 4, 16, 64	
a) What are the next four terms of the sequence.	b) Describe how you go from one term of the sequence to the next.
c) Is this sequence ARITHMETIC or GEOMETRIC? How do you know?	d) What is the RECURSIVE formula for the sequence?
e) What is the EXPLICIT formula for the sequence?	f) What is the 12th term of the sequence?

94.

Directions: Use the following sequence to answer questions		
123, 109, 95, 81		
a) Is the sequence geometric or arithmetic? Why?	b) What is the recursive formula for this sequence?	What is the explicit formula for this sequence?
c) What's the 25th term of the sequence?	d) Describe what the graph will look like using complete sentences.	