

Name: _____ Class: _____ Date: _____

Algebra 1A Final Exam Review

Unit 1: Families of Functions

1. Make a sketch of the graphs of the following families of functions :

Quadratic

Linear

Cubic

Exponential

Absolute-Value

Rational

Square Root

2. Write an equation that would represent the following families of functions:

Quadratic

Linear

Cubic

Exponential

Absolute-Value

Rational

Square Root

3. Find the domain and range of the relation from the table below. Describe in your own words the meaning of domain and range.

X	Y
2	3
4	5
6	7
8	9

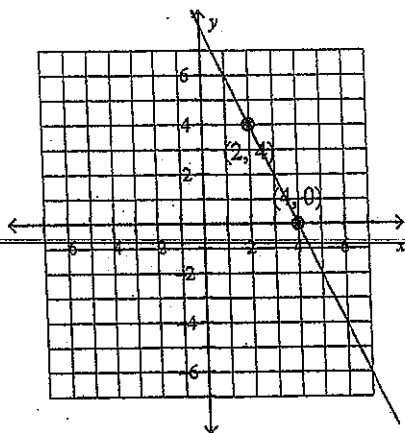
4. Determine the relationship between the x- and y- values in the table above. Write an equation.
5. A moving company charges \$130 for a weekly truck rental plus \$1.50 per mile. Identify the independent and dependent variables. Write an equation in function notation for this situation.
6. For $f(x) = 5x + 3$, find the output of $f(x)$ when the input is 6. Describe in your own words the mean of input and output.

Unit 2: Linear Functions

7. On a piece of graph paper graph the function $y = -2x + 5$.
8. Tell whether the table below represents a linear function. Explain.

x	y
2	4
5	3
8	2
11	1

9. Find the slope of the line.



10. Sketch a graph whose slope of the line is positive, negative, zero and undefined.

11. Find the slope of the line that contains the points (3, 7) and (-5, 5).

12. Find the slope of the line described by $2x + 6y = 18$.

13. Write the equation that describes the line in slope-intercept form.

Slope = -2, point (-4, 3) is on the line.

14. Write an example of a linear equation in standard form.

15. Write the equation $4x + 8y = 32$ in slope-intercept form. Then graph the line described by the equation on your graph paper.

16. Find the x- and y- intercepts of $-5x + 5y = -25$. Describe in your own words the meaning of x-intercept and y-intercept.

17. Sandy rides her bike to school and has an odometer that measures the distance traveled. She subtracts this distance from the distance to school and records the distance that remains between her and the school. Find the intercepts. What do the intercepts represent?

Time traveled (min)	Distance Remaining (ft.)
0	5,280
2	4,224
4	3,168
6	2,112
10	0

18. Describe in your own words the meaning of parallel lines. Mention something about the slopes of parallel lines. Give an example in equation form of two lines that are parallel.

19. Describe in your own words the meaning of perpendicular lines. Mention something about the slopes of perpendicular lines. Give an example in equation form of two lines that are perpendicular.

20. Write an equation in slope-intercept form for the line parallel to $y = 3x - 4$ and passes through the point $(2, 8)$. Then graph both lines on your graph paper.

Unit 3: Systems of Linear Equations

21. Describe in your own words the meaning of systems of linear equation.

22. Describe in your own words the meaning of solution of a system of linear equations.

23. Solve the system by graphing. Use your graph paper.

$$\begin{cases} y = x + 2 \\ y = 2x + 3 \end{cases}$$

24. Solve the system of equations using whatever method you would like.

$$\begin{cases} y = x + 1 \\ 4x + y = 6 \end{cases}$$

25. Solve the system of equations using whatever method you would like.

$$\begin{cases} 3x + y = 2 \\ 4x + y = 20 \end{cases}$$

26. Solve the system of equations using whatever method you would like.

$$\begin{cases} 3x + 4y = 18 \\ -2x + 4y = 8 \end{cases}$$

27. Under what circumstances would a system of linear equations have NO SOLUTION? Please give one example of a system of linear equations with NO SOLUTION.

28. Under what circumstances would a system of linear equations have ONE SOLUTION? Please give one example of a system of linear equations with ONE SOLUTION.

29. Under what circumstances would a system of linear equations have INFINITE SOLUTIONS?
Please give one example of a linear system that has INFINITE SOLUTIONS.

30. Eaton Rapids High School is selling tickets to the football game Friday night. Three hundred fifty-eight tickets were sold. Student tickets were \$1.50, and non-student tickets were \$3.25. If the school made \$752.25 how many student tickets and how many non-student tickets were sold.

Unit 4: Rules of Exponents

31. Describe in your own words the meaning of power. Give an example of your thinking.

32. Describe in your own words the meaning of integer. Give an example.

33. Describe in your own words the meaning of index. Give an example.

34. Write 100,000 as a power of 10.

Simplify the following expressions:

35. 3^{-2} .

36. $(5)^0$.

37. $\frac{6x^0y^{-8}}{z^{-8}}$

38. $m^8 \cdot y^6 \cdot m^{-6}$

39. $\frac{3^2}{3}$

$$40. \frac{y^{10}z^{18}}{(yz)^9}$$

$$41. \left\{ \frac{2m^9}{m^3n^7} \right\}^4$$

$$42. \left\{ \frac{4}{5} \right\}^{-3}$$

$$43. 64^{\frac{1}{3}}$$

$$44. \left\{ a^2 b^{\frac{1}{2}} \right\}^8 \sqrt[3]{b^3}$$