

Dear Accelerated Coordinate Algebra/Analytic Geometry A Student,

Congratulations for being selected to the Accelerated Math program at Arabia Mountain High School. This is a fast-paced, college preparatory math course. It emphasizes more complex applications and challenging exercises than might be encountered in the traditional high school course. Your success in this class will be the result of the consistency of your study and homework habits. You are a student whose job and responsibility is to be the best student that you can be!

During the semester, we will be learning many new concepts in Accelerated Algebra. Because of the pace and rigor of the course, there will not be a lot of time to spend reviewing topics that you were exposed to in previous math courses. This packet is a review of those topics and courses.

Work all of the problems neatly on notebook paper, numbering your work, and CIRCLING your answers.

Be sure to make a note of the problems that you have difficulty solving. (For the graphing problems, you may use graphing paper or make your own sketch on notebook paper.)

To earn full credit, you must show your work for problems in the packet. Do not list only an answer.

The completed packet represents your first graded assignment in Accelerated Coordinate Algebra and is due on the first Friday of the 2018-2019 school year, to Mr. Webb in Room E-102.

I look forward to working with each of you this next school year.

Sincerely,

Mr. Webb

Acc. Coordinate Algebra/Geometry Teacher



Resources:

If you need a refresher on any of these topics, we recommend visiting www.khanacademy.org.

Additional sites below address specific areas.

Solving equations:

<http://regentsprep.org/Regents/math/ALGEBRA/AE2/LSolvEq.htm>

Functions:

<http://regentsprep.org/Regents/math/ALGEBRA/AP3/LFunction.htm>

Radicals:

<http://regentsprep.org/Regents/math/ALGEBRA/AO1/Laddsubt.htm>

Exponents:

<http://www.coolmath.com/algebra/01-exponents/06-exponent-rules-putting-rules-1-4-together-01.htm>

Linear equations:

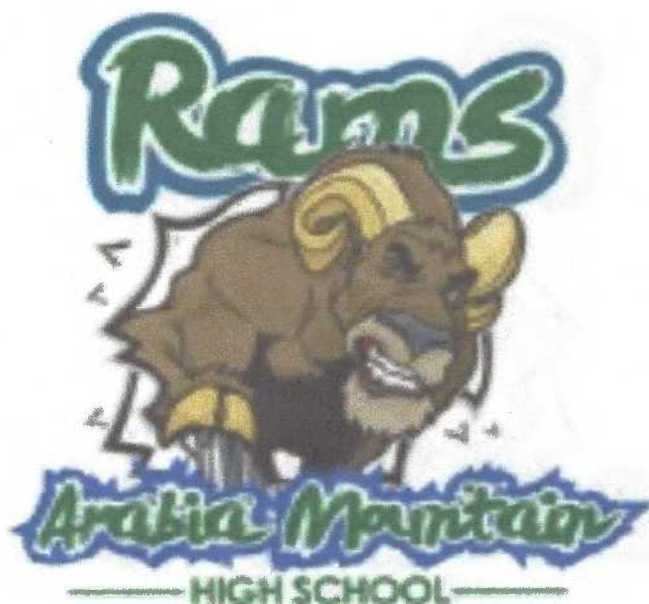
<http://www.coolmath.com/algebra/08-lines/06-finding-slope-line-given-two-points-01.htm>

Parallel Lines and Transversals:

<http://www.studyzone.org/mtestprep/math8/g/8parallelanglepairs1.cfm>

Pythagorean Theorem:

<http://www.mathsisfun.com/pythagoras.html>



Accelerated Coordinate Algebra/Analytic Geometry A Summer Packet

Expressions-

Evaluate the algebraic expressions for #'s 1 - 3 below (no decimal answers):

- $n^2 - 25$ a) when $n = -10$ b) when $n = -5$ c) when $n = 1/2$ d) when $n = 9$
- $\frac{-7d+14}{2}$ a) when $d = 2$ b) when $d = -2$ c) when $d = 6/7$ d) when $d = 4$
- Write an algebraic expression for the situation. Define the variable, then evaluate the expression for the amount given. Andrea wants to buy a photo book from an online photo printing service. The book costs \$14.98 plus \$0.39 for each photo printed in the book. How much will she pay if she wants to have 35 photos in the book?

Linear Equations (in 1 or 2 variables) and Inequalities-

Find the slope and y-intercept of the line for each equation.

- $y = -3x + 4$
- $y = \frac{5}{4}x + \frac{6}{11}$

Write an equation in slope-intercept form, $y = mx + b$, for the line with the given information.

- slope of -8 and y-intercept of $(0, 12)$
- slope of $\frac{6}{11}$ and contains $(0, -3)$

Solve the following equations and inequalities showing all work.

- $\frac{1}{2}(x - 5) + 1 = 2x + 4$
- $3 - x > -3$
- $\frac{-3}{4}x = 12$
- $-2 = 8 - \frac{x}{5}$
- $-1 + \frac{x}{4} = 3 + \frac{2x}{5}$
- $4 - (5x - 6) \leq 18 - 3x$

Write each radical expression in simplest form:

- a) $\sqrt{64}$ b) $\sqrt{400}$ c) $\sqrt{196}$

Between what two integers is

- a) $\sqrt{27}$ b) $\sqrt{150}$ c) $\sqrt{500}$

Graphing Linear Equations

Find the slope, x-intercept and y-intercept for each line and the graph each line.

16. $y = x + 2$

17. $y = 2x$

18. $x + y = 4$

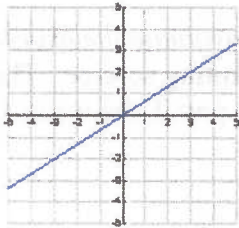
19. $-x + y = 5$

20. $2x + 3y = 12$

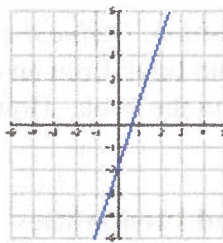
21. $3x - 2y = 0$

Write an equation for each line in slope-intercept form.

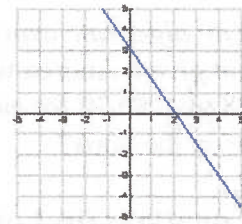
22.



23.



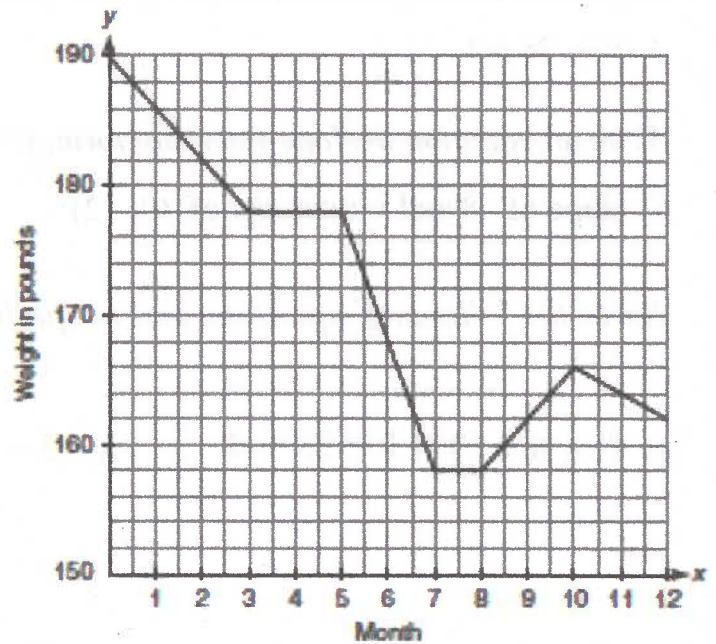
24.



25.

Answer the questions about the graph to the right that represents a dieter's weight loss over a year's period.

- Describe what happens between months 3 and 5.
- Sketch a copy of graph, circle where the graph increases and interpret the meaning.
- During which months did the dieter lose weight the fastest?
- What is the rate of change that occurs between months 10 and 12?



26.

Write the following words as algebraic expressions.

two less than a number _____

a number plus two _____

five times a number _____

a number subtracted from 12 _____

one-half the cube of a number _____

five increased by three times a number _____

20 less than eight times a number _____

27. A cell phone company charges \$25 a month plus \$0.10 per minute for phone usage. If this information was placed in a linear equation, what would represent the slope?

Solve the equation for x .

28. $3x^2 = 48$

29. $6x - 7 = 47$

30. $3x - 12 = -27$

31. $3(x - 3) = 5x + 21$

32. $4(x + 2) - 2(x - 3) = 20$

33. $6x + 3 = 45$

34. Use the following data for #a-c:

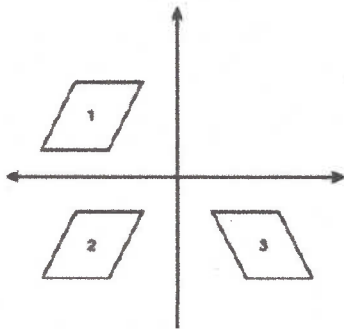
Number of Sick Days of Employees: 4, 5, 3, 1, 0, 3, 2

- a. Find the mean. What does this represent?
- b. Find the median. What does this represent?
- c. Find the mode. What does this represent?

36. Define and sketch an example of each of the following:

- a) translation
- b) reflection
- c) rotation
- d) dilation

36. What sequence of transformations was used to get from Figure 1 to Figure 2 to Figure 3?



Vocabulary and Terms-

Define, draw, or explain the following terms.

- a. variable
- b. coefficient
- c. constant
- d. slope
- e. rate of change
- f. Pythagorean Theorem
- g. hypotenuse
- h. vertical angles