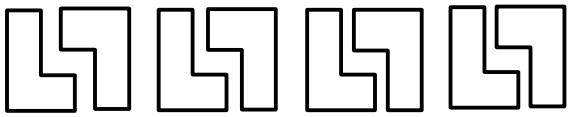
Incoming

ALGEBRA I

Summer Math Calendar



Summer Math Calendar

Dear Soon to be Algebra I students and parents of soon to be Algebra I students,

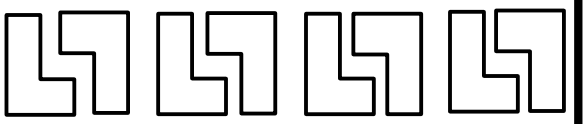
This summer math calendar has not been created to torture you. It was actually created with the opposite intent. This was created to make you math aficionados, especially as you prepare to begin Algebra I! To help you do this, I have put together this calendar with math concepts that you have already learned so that your skills are sharp and ready to begin Algebra.

Each week you will be assigned five sets of problems to complete. You may choose when to do it. You may work on the calendar in whichever way best suits your style. You may do the problems for the week in one day or you may spend five minutes a day completing each problem. All I ask is that you do not leave the calendar until the week or even the day before school begins. Trust me, you will not complete it! This calendar is meant for you to maintain your skills. You may use siblings, parents, and most importantly your brain to complete the calendar. You must show all of your work and the work should be done in pencil.

Lastly, please complete the evaluation forms. There is one for you and one for your parents. Good luck! Have a fabulous summer! I cannot wait to see you when class begins!

Sincerely,

Summer Math Calendar Evaluation for Students



Please rate the following on a scale from 1-10, with 1 being the easiest and 10 being the hardest.

1.) _____ How would you rate the difficulty of the problems in general throughout the summer math calendar?

2.) _____ How would you rate the variety and amount of problems throughout the calendar?

3.) What types of problems in the calendar were the most difficult and why?

4.) What types of problems in the calendar were the easiest and why?

5.) When did you complete the calendar? How did you pace yourself when completing the calendar? (Did you do it every day, once a week, completed it in a few days?)

Thank you for taking the time to complete this evaluation!

Summer Math Calendar Evaluation for Parents

1.) How difficult did you feel this summer math calendar was for your student? Was it too easy or too difficult or somewhere in the middle?

2.) How much help did you give your son or daughter in completing this calendar?

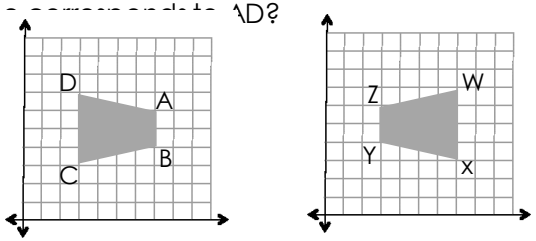
3.) What would you say was the best thing about the summer math calendar?

4.) What would you say was the most difficult thing about the summer math calendar?

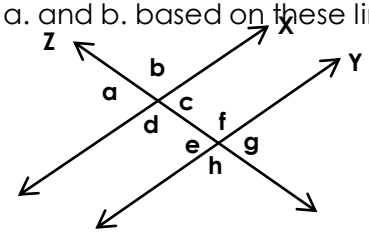
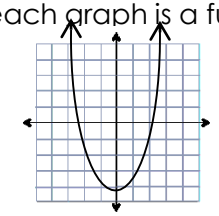
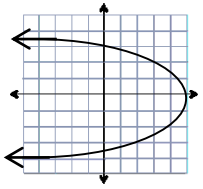
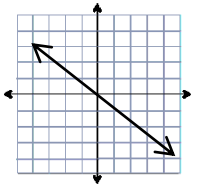
5.) If you could change one thing about the summer math calendar in general, what would you change?

Thank you for taking the time to complete this evaluation!

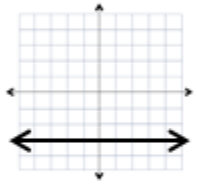
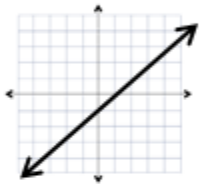
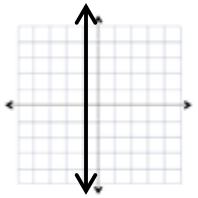
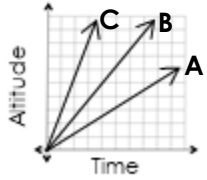
Week One

Problem	Work & Answer
Circle the rational numbers. How do you know if a number is rational? $\sqrt{17}$ $\frac{1}{2}$ -1,423 0.375 $\frac{3}{0}$	
Simplify. Write your answer in exponential notation. a.) $2^3 \times 2^{-5}$ b.) $(6a^2)^3$	
Was the second shape reflected or rotated? Which side of the second shape corresponds to AD? 	
Find the volume of a sphere if r=6cm. Use 3.14 for the value of pi.	
Solve for x. $2(x - 7)=9x + 10 - x$	

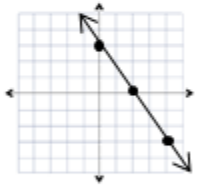
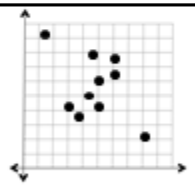
Week Two

Problem	Work & Answer
a.) 40 is between which two perfect squares? b.) Which two integers is the $\sqrt{40}$ between?	
Lines x and y are parallel and cut by the transversal z. Answer questions a. and b. based on these lines below. 	a.) Name the sets of alternate exterior angles. b.) Alternate exterior angles are always _____. a.) complementary b.)supplementary c.) congruent
Determine if each graph is a function. If it is not a function, explain why. **A.**  **B.**  **C.** 	
The population of a town is about 5.7×10^5. Write the population in standard form.	
Solve each equation using a cube root. a.) $x^3 = 1{,}331$ b.) $\sqrt[3]{\frac{64}{1000}} = x$ c.) $x^3 = \frac{27}{216}$	

Week Three

Problem	Work & Answer
Simplify using exponential notation. $\frac{8^2(8^3)^2}{8^5}$	
Name the type of slope of the graphs below as either positive, negative, zero or undefined. A.  B.  C.  D. 	
Write each product using scientific notation. a.) $(4.3 \times 10^5)(1.6 \times 10^4)$ b.) $(2.25 \times 10^3)(5.8 \times 10^6)$	
A, B and C represent movement of three different remote controlled airplanes. Study the graph, then answer the questions in the next box. 	a.) Which plane moves at the fastest rate? b.) Which plane moves at the slowest rate? c.) How can you tell how fast or slow each plane goes?
Determine the slope for each set of ordered pairs. a.) (-1,3) (7,-1) b.)(6,8,) (6,-2) c.) (-6,-5) (-3,-3)	

Week Four

Problem	Work & Answer
Tell whether each table represents a linear or non linear function. If it is not linear explain why. A. B. C.	
Look at the graph, determine the slope, y-intercept, and x-intercept. Then write the equation for the line in y-intercept form. 	Slope: _____ Y-intercept: _____ X-intercept: _____ Slope-intercept Form: _____
Study the scatter plot on the right. Circle any clusters and put an x on an outliers.	
Solve the system of equations by substitution. $5x - y = 4$ $y=3x$	
The area of a square is 169 square centimeters. Find the length of one of its side.	

A.

X	Y
1	3
2	5
3	7
4	9

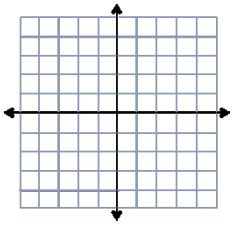
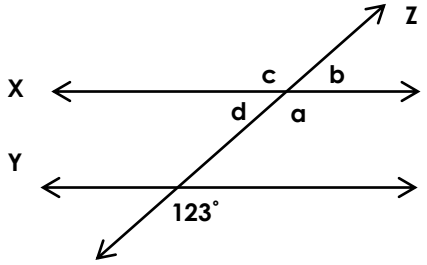
B.

X	Y
2	2
4	4
6	6
8	8

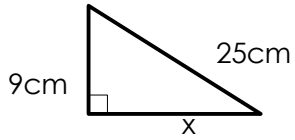
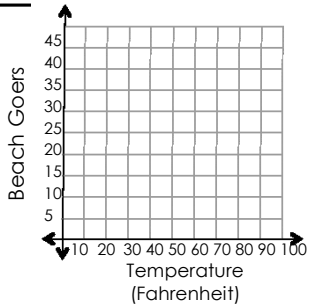
C.

X	Y
3	5
6	10
9	12
12	24

Week Five

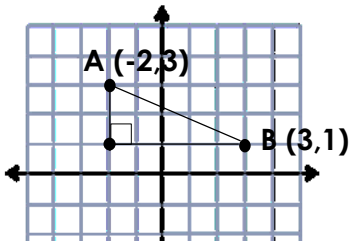
Problem	Work & Answer
(6,3) and (12,6) are on the same line. Find the slope, y-intercept. Then write the equation of the line in slope-intercept form.	
Simplify each expression using exponential notation. a.) $(5^3)(5^4)^6$ b.) $(9a^3)^2$	
Name the two integers each answer lies between. a.) $\sqrt{54}$ b.) $\sqrt{12}$ c.) $\sqrt{149}$	
Solve the system of equations by graphing. $y = 3x + 2$ $y = -2x - 3$	
Lines x and y are parallel and cut by transversal line z. Find the measures of a, b, c and d. 	

Week Six

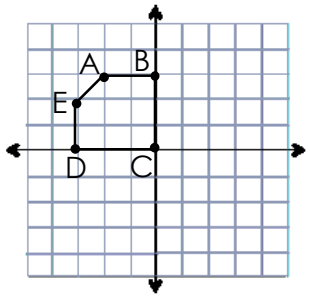
Problem	Work & Answer
Solve the system of equations using any method. $5x - 6y = -32$ $3x + 6y = 48$	
A glass shaped as a cylinder is filled to the top with water. The glass measures 16cm tall and has a diameter of 6cm. Find the volume of the water in the glass. Give your answer in terms of π.	
Use the Pythagorean theorem to find the missing side length.  	
Use the data in the table to create a scatter plot. Include the line of best fit. Circle any outliers.  	
Solve for x. $3(10 - x) = -3x + 30$	

Temperature (degrees Fahrenheit)	51	75	80	89	85	93	81
# of people at the beach	2	25	30	40	36	45	32

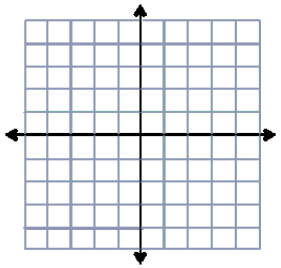
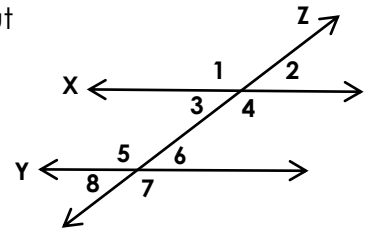
Week Seven

Problem	Work & Answer
Identify each equation as linear or nonlinear by writing it in the correct column in the table at the right. $X + 2y^2 = 10$ $y = -3x$ $y^2 = 5x$ $y = x^2 + 1$ $y = -7$	<table><tr><th>Linear</th><th>Nonlinear</th></tr><tr><td></td><td></td></tr></table>
Solve for w. $\frac{3w + 5w}{2} - 6 = 18$	
Solve the system of equations using any method. $y = -2x + 3$ $y = x - 6$	
Use the Pythagorean theorem to find the distance between the two points A and B. Round your answer to the nearest hundredth.	
A cheetah runs 75 miles per hour. It has already ran 150 miles. Write a linear equation that shows how far the cheetah will run in ***h*** hours. Let ***d*** stand for the total distance it will run.	

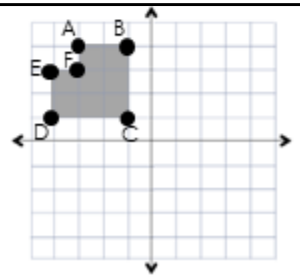
Week Eight

Problem	Work & Answer
Solve for a. $10 - \frac{1}{8}a = \frac{5}{8}a - 2$	
Write the quotient in scientific notation and in standard form. $(3.64 \times 10^7) \div (2.6 \times 10^4)$	
Reflect the shape along the y-axis. Record the new coordinates of each point on the new shape.	
Find the volume of a sphere with a radius of 2.1cm. Write your answer in terms of pi.	
Find the cubed root. $\sqrt[3]{\frac{176}{343}}$	

Week Nine

Problem	Work & Answer
Determine if each of the following is rational or irrational. a.) $\sqrt{16}$ b.) $\sqrt{17}$ c.) $\sqrt{18}$	
Graph the line that goes through the point (-1,3) and has a slope of negative two. Then write the equation of the line.	
Lines X and Y are parallel, cut by the transversal line Z. Name the pairs of corresponding angles. 	
Study equations below. Write the equation that has a smaller slope. A.) $y = \frac{-2}{3}x$ B.) $y = \frac{1}{3}x$	
Simplify the expression using exponential notation. $\frac{(4x^3y^2)^2}{2x^6y}$	

Week Ten

Problem	Work & Answer
A scientist is recording the weight of flower petals. Using the table write each weight using scientific notation.	
Solve the equation for m. $\frac{25m - 1}{3} = 5m - 7$	
Find the slope of the line that goes through the points (-1,3) and (-2, 1)	
Identify the slope in each linear equation below: a.) $y = \frac{1}{2}x - 5$ b.) $y = 3x$ c.) $y = 5$	
Rotate the given shape 90 degrees about the y-axis. Draw the new shape and record the new coordinates for points A, C, and E.	

Flower Petal	Weight (ounces)	Weight in Scientific Notation
1	0.00341	
2	0.1980	
3	0.000765	