

# Summer Math Calendar

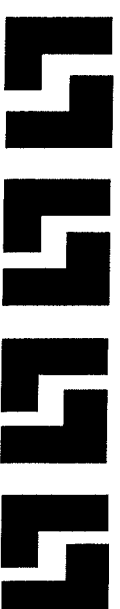
Dear Soon to be Algebra I students and parents of soon to be Algebra I students,

This summer math calendar has not been created to torture you. It was created with the opposite intent. This was created to make you math aficionados, especially as you prepare to begin Algebra II! 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.

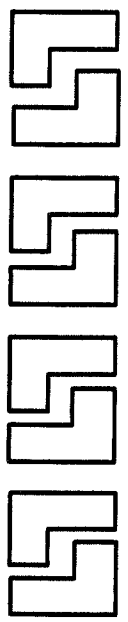
Each week you will be assigned five sets of problems to complete. You may choose when to do it. You may work on the calendar in whichever way best suits your style. You may do the problems for the week in one day or you may spend five minutes a day completing each problem. All I ask is that you do not 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!

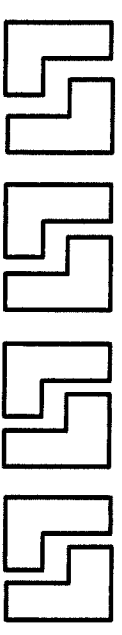
Sincerely,

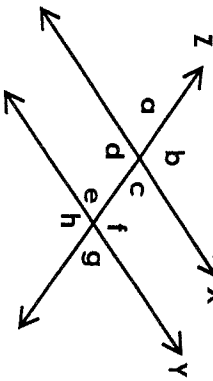
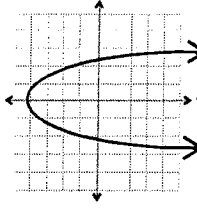
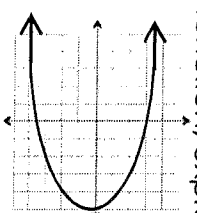
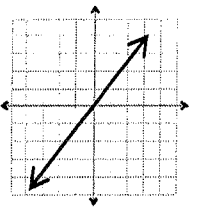


Problem	Work & Answer
<p>Circle the rational numbers. How do you know if a number is rational?</p> <p> <math>\sqrt{17}</math>    <math>\frac{1}{2}</math>    -1,423    0.375    <math>\frac{3}{0}</math> </p>	
<p>Simplify. Write your answer in exponential notation.</p> <p>a.) <math>2^3 \times 2^{-5}</math>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



# Week Two



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

## Work & Answer

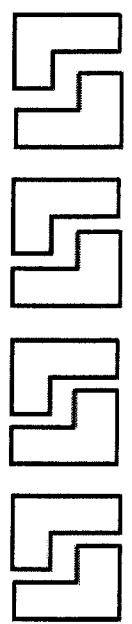
$$\frac{8^2(8^3)^2}{8^5}$$

A coordinate plane with x and y axes ranging from -10 to 10. A point is plotted at (-4, 3).

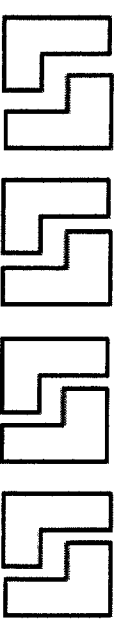
b.)  $(2.25 \times 10^3)(5.8 \times 10^4)$ 

c.)  $(-6, -5)$   $(-3, -3)$

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# Week Four



# Problem

## Work & Answer

Tell whether each table represents a linear or non linear function. If it is not linear explain why.

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X	Y
1	3
2	5
3	7
4	9

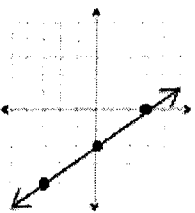
2.

X	Y
2	2
4	4
6	6
8	8

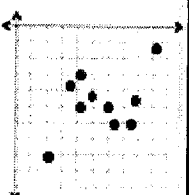
9.

X	Y
3	5
6	10
9	12
12	24

Look at the graph, determine the slope, y-intercept, and x-intercept. Then write the equation for the line in y-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.

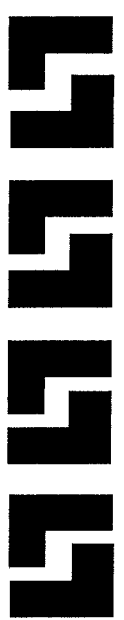
Find the length of one of its side.

Slope: \_\_\_\_\_

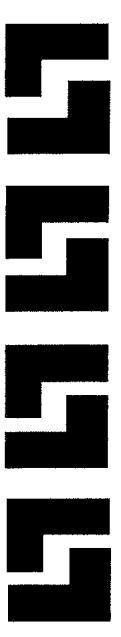
Y-intercept: \_\_\_\_\_

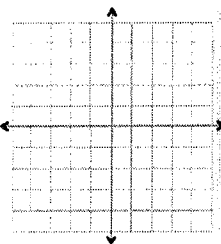
X-intercept: \_\_\_\_\_

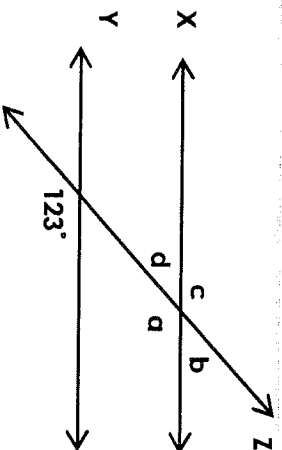
Slope-intercept Form: \_\_\_\_\_

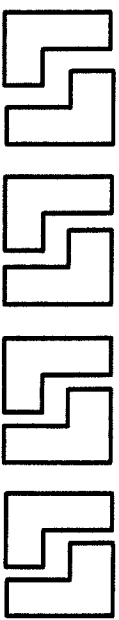


# Week Five

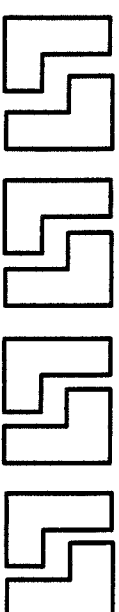


Problem	Work & Answer
<p>(6,3) and (12,6) are on the same line. Find the slope, y-intercept. Then write the equation of the line in slope-intercept form.</p>	
<p>Simplify each expression using exponential notation.</p> <p>a.) <math>(5^3)(5^4)^6</math>    b.) <math>(9a^3)^2</math></p>	
<p>Name the two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





# Week Six



## Problem

Solve the system of equations using any method.

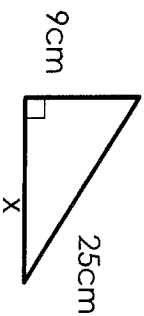
$$5x - 6y = -32$$

$$3x + 6y = 48$$

## Work & Answer

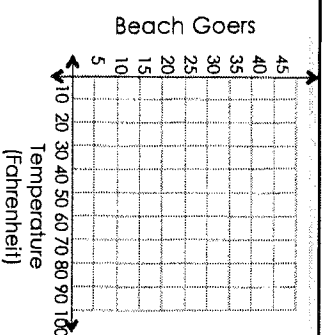
A glass shaped as a cylinder is filled to the top with water. The glass measures 16cm tall and has a diameter of 6cm. Find the volume of the water in the glass. Give your answer in terms of  $\pi$ .

Use the Pythagorean theorem to find the missing side length.



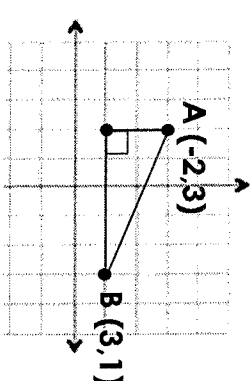
Use the data in the table to create a scatter plot. Include the line of best fit. Circle any outliers.

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

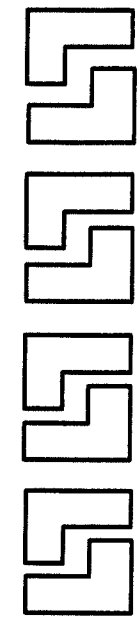


Solve for x.  $3(10 - x) = -3x + 30$

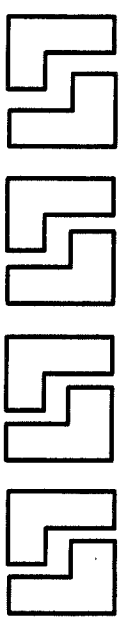
Week Seven

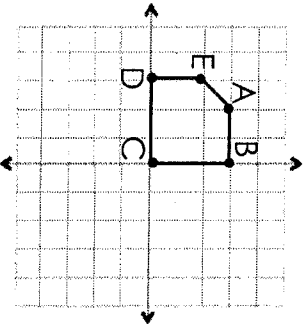
Problem		Work & Answer	
Identify each equation as linear or nonlinear by writing it in the correct column in the table at the right.			
$x + 2y^2 = 10$	$y = -3x$	$y^2 = 5x$	
$y = x^2 + 1$	$y = -7$		
Solve for w.			
$\frac{3w + 5w}{2} - 6 = 18$			
Solve the system of equations using any method.			
$y = -2x + 3$ $y = x - 6$			
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.			

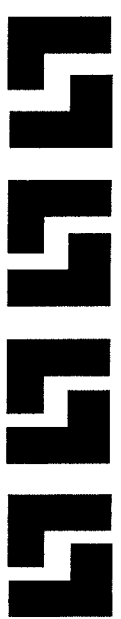




# Week Eight



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



# Week Nine



## Problem

## Work & Answer

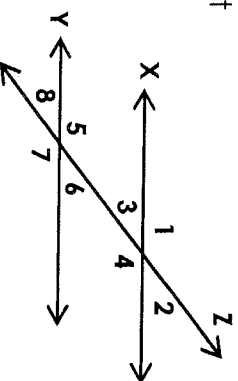
Determine if each of the following is rational or irrational.

- 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.



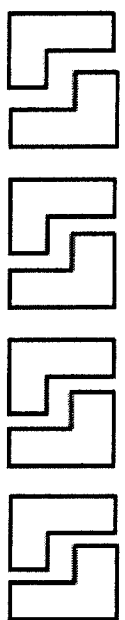
Study equations below. Write the equation that has a smaller slope.

A.)  $y = \frac{-2}{3}x$       B.)  $y = \frac{1}{3}x$

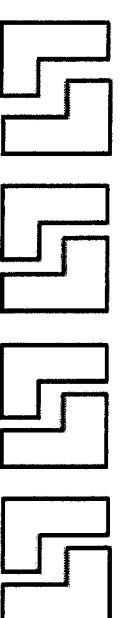
Simplify the expression using exponential notation.

$$\frac{(4x^3y^2)^2}{2x^6y}$$

Problem	Work/Answer
1. Determine if each of the following is rational or irrational. a.) $\sqrt{16}$ b.) $\sqrt{17}$ c.) $\sqrt{18}$	
2. Graph the line that goes through the point $(-1, 3)$ and has a slope of negative two. Then write the equation of the line.	
3. Lines X and Y are parallel, cut by the transversal line Z. Name the pairs of corresponding angles.	
4. Study equations below. Write the equation that has a smaller slope. A.) $y = \frac{-2}{3}x$ B.) $y = \frac{1}{3}x$	
5. 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.

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

Solve the equation for m.

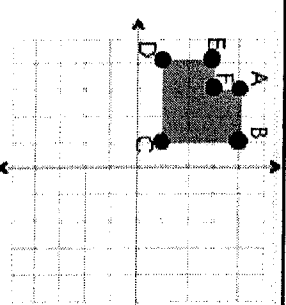
$$\frac{25m - 1}{3} = 5m - 7$$

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.)  $y = 5$

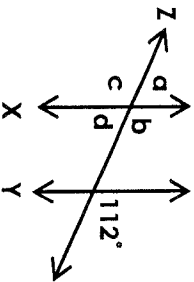
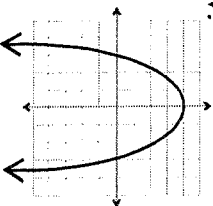
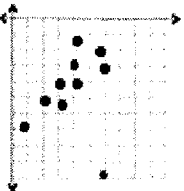
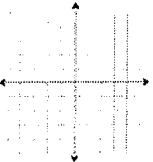
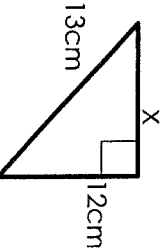
Rotate the given shape 90 degrees about the y-axis. Draw the new shape and record the new coordinates for points A, C, and E.



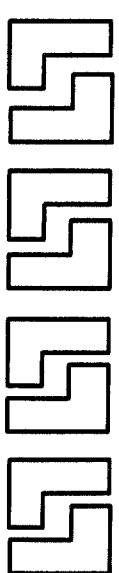
Name: \_\_\_\_\_

# Algebra Summer Math Quiz

Complete the following problems and record your answers below. Please show all your work using the work page.

1.) $\sqrt{68}$ is between which two integers?	2.) Solve for x. $\frac{3x - 12}{2} + 6 = 24$	3.) Write if each equation is linear or nonlinear. a.) $y = -3x$ b.) $y = x^2 + 3$ c.) $y^2 = 3x$
4.) Simplify using exponential notation. $\frac{4^3(4x^3)^2}{4x^4}$	5.) The population of a city is approximately 7,120,000. Write this number in scientific notation.	6.) (2,-1) and (0,1) are on the same line. Find the slope, y-intercept of this line. Then write the equation of the line in slope-intercept form.
7.) Lines x and y are parallel, cut by transversal z. Find the measure of angle d. 	8.) Determine if the graph is a function. Explain how you know. 	9.) Study the graph. Circle the cluster. Put an x on any outliers. 
10.) Give an example of a line with negative slope. 	11.) A glass is filled to the top with milk. The glass measures 14cm tall and 6cm wide. Find the volume of milk, use 3.14 for pi.	12.) Use any method to solve the system of equations. $2x + y = 6$ $3x + 2y = 24$
13.) Jim started his new job already having \$125. He gets paid \$12/hour. Write an equation for the total amount of money Jim will have. Use x to represent the number of hours and y to represent total amount of money he will have.	14.) Write your answer in scientific notation. (3.5 x 10 <sup>6</sup> ) (2.4 x 10 <sup>-4</sup> )	15.) Use the Pythagorean Theorem to find the missing length. 

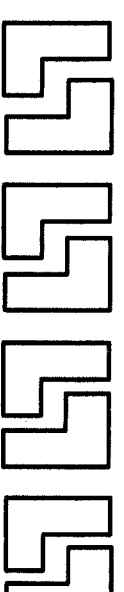
# Algebra Summer Math Quiz Work Page



Use this space to show your work (if necessary) for each problem.

1.)	2.)	3.)
4.)	5.)	6.)
7.)	8.)	9.)
10.)	11.)	12.)
13.)	14.)	15.)

# 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!*