



Pre-Algebra Summer Work

Below are a list of activities for you to complete over the summer. Our desire is that you finish one per week, resulting in 8 total activities. Each activity specifically states what should be turned in on your return to school. All assignments will be due during the first week of classes and will be counted as your first assessment.

While eating out at a restaurant, determine the tip that you should leave at 15%, 20%, and 25%. Don't use a calculator! Determine what you will actually leave.

Turn in: a copy / photo of the receipt with the tip you gave, along with any work that you completed

Go for a walk. Calculate your average speed (measure your distance, measure your time, then write a fraction with distance on the top and time on the bottom, and simplify!)

Go for a run / bike ride. Calculate your average speed.

Go for a car ride. Calculate your average speed.

Determine how far you would go if you did each activity for 6 hours. Determine how long it would take you to go 100 miles by all three methods.

Turn in: all 3 calculations and your answers to the 2 additional determinations

Create a mathematical expression that includes all 4 basic operations (ex: $4 + 8 \div 2 - 10 \times 3$). Then, write a story that could be represented by the expression you have created. Be sure that the result of your story matches the result of your expression! And don't forget your order of operations!

Turn in: your story with the expression written at the top

Play 5 rounds of a card or board game in which you keep score with the same people each time. Keep track of the scores of each of the players. Find the mean, median, and range of the scores for each player after 5 games. Then, find each of these statistics for ALL of the scores combined.

Answer the following questions: Which players were above average? Which players had scores that were outliers?

Turn in: your data and your data analysis



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Find a recipe that includes at least 5 ingredients. Decide how much of each ingredient you would need in order to make a $\frac{3}{4}$ of a batch. Write out your calculations, then get cooking!

Turn in: your recipe with adjusted ingredient measurements, and a picture of the food you made

Keep track of how you spend your time for an average weekday of the summer. Then, keep track of how you spend your time for an average day in a summer weekend. Create a pie chart or bar graph that has at least 4 categories that represents each day. Write 3 sentences pointing out the similarities and differences of your graphs.

Turn in: your pie charts or bar graphs with your sentences

Complete 4 logic puzzles with members of your family. [Some can be found here.](#)

Turn in: printouts of the completed logic puzzles

Measure a regular box food pantry item, like a cereal box. Then, measure the dimensions of your bedroom. How many of that object would it take to cover the floor of your bedroom? How many to fill up your room from floor to ceiling and wall to wall?

Turn in: your calculations and findings

The story of a person's life from their point of view is called an autobiography. You should write an 'automathography' about yourself. Who are you as a math student? What math experiences have shaped you? What math experiences are you most proud of? What do you wish you could change?

Turn in: a one page response to the prompt

On a summer drive or walk, take pictures of at least 10 three-dimensional you see, with at least 3 different types (prisms, cylinders, pyramids, etc.).

Turn in: these pictures, along with descriptions of what they are and where you found them.

Take a book you read over the summer and turn to page 24 (you can pick something nearby if that page is only partially complete, blank, etc.). Look at the first 6 lines of that page. What are the chances that a word randomly selected from those 6 lines has 5 letters in it? What are the chances that a word randomly selected from those lines has the letter 'e' in it? Do the same thing for page 52 and compare your answers.

Turn in: your calculations and any work that you did to complete the task, as well as your comparisons



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Create a piece of art that includes at least one of each of the following: a circle, a rectangle, a square, a triangle, a trapezoid, a rhombus, and one additional shape. Write a 4-5 sentence summary of your piece.

Turn in: your artwork and your summary

Identify 5 ways in which you used or encountered negative numbers over the summer. Write a sentence for each.

Turn in: your sentences

Buy (or pretend to buy) some stuff with a coupon that is already on sale! Clothing stores might work best for this one. Look for sales: 10% off, BOGO, etc. Write down the original price, sale price, and the sale + coupon price (exclude tax for all). Do this for at least 3 items (they can have different sales). How much did you save on each item?

Turn in: a table of prices, pictures of the items, and your calculations

Go to [this website](#) and pick one of the graphs. Use the coordinates given to create a picture on a piece of graph paper. Then decorate it!

Turn in: the picture you created