



May 2023

Summer Math Work: Geometry

We hope you are enjoying your summer but are also thinking about how to have a great school year next year.

The attached problem set is intended to address Geometry topics needed for success. **All Geometry students are required to complete the problem set to be turned in to their teacher as a homework assignment when returning to school in the fall.** This is the “summer reading” for your mathematics course. Be sure to show your work clearly in completing the problems.

If you find that there are specific topics that you need to review in more depth, you may want to spend some time doing so. Please consider this in planning your time to work.

You are welcome to receive help on any of the problems or topics covered. Indeed, if you have difficulty, we encourage you to work with a parent, older sibling, friend, or teacher so that you master each topic. You may consult a textbook or online resource if you wish as you work through the problems. **Be sure, however, to show all your work, and that you understand all the work you present. Note that you will have a graded classroom test on this material shortly after the start of school in September.**

We do not expect this packet to be a burden for you. However, we know that reviewing these topics will put you in a much better position to succeed in Geometry.

Best wishes for a happy rest of the summer.

The work in this packet was completed independently by my daughter.

Parent Signature _____

*Please **DO NOT** use a calculator in completing this packet.*

REMEMBER TO WORK ON ABOUT TEN PROBLEMS EACH WEEK SO YOUR BRAIN CAN STAY MATHEMATICALLY ACTIVE ALL SUMMER LONG. THANK YOU!

Geometry Scavenger Hunt Project

Due Date: 1st day of classes 2023-2024 School Year

You are going to participate in a geometry scavenger hunt. You have the choice of going around the school, your home, where you travel, mall, etc. and collect photos of the following items (feel free to google for examples/definitions if needed):

1. Right, Acute, or Obtuse triangle
2. Quadrilateral
3. Polygon
4. Collinear points
5. Non-collinear points
6. 2 parallel lines
7. 2 perpendicular lines
8. A pair of vertical angles formed by 2 intersecting lines
9. Similar Figures (same shape different size)
10. 2 lines cut by a transversal

Criteria:

Your project has to have a **THEME**. (ex: sports, travel, cars, etc.) Your pictures should come from your own photographs (use a camera/cell phone) in a real life setting. You may not find pictures in magazines and from the internet. Drawings will not count.

Please be **CREATIVE** with your project. Only one picture or photo can be submitted from any single category to count toward your grade. There are 10 categories.

Procedure:

After you have collected all of your photos:

- Label each picture with the proper category
- Write a one-two sentence description of each photo and explain why you used the photo and how it fits the theme.
- The writing must be clear, neat, and legible (if hand-written).

Writing Part:

1 page double-spaced:

- Explain why you chose the theme you did and whether it was easy or difficult to find photos to fit the theme. Also write about what you learned while doing this scavenger hunt.

Presentation:

You have a choice as to how you would like to create and present your project. Your options are:

- Video
- Brochure (digital)
- Art Piece (Digital)

- A photo array/photo collage (digital)
- PowerPoint
- Prezi (www.prezi.com)
 - Prezi is easy to use and is similar to creating a PowerPoint by has different visual effects and can be accessed online.

Grading:

- | | |
|---------------------------------------|-----------------|
| • Each picture is worth 1 points. | 10 points total |
| • Each description is worth 2 points. | 20 points total |
| • 1 page writing part: | 10 points |
| • Neatness/display of presentation: | 5 points |
| • Presentation | 15 points |

****The project is worth 60 points****

Example Photo:



Category: #16 (2 lines cut by transversal)

Description: This picture of a parking lot has many parallel lines that are all cut by a transversal. One set of 2 lines is highlighted. Since parking lots are made for cars, this fits my theme of cars/driving.

Or, maybe your theme was shopping, then: This fits my theme of shopping because this is from the Garden State Plaza mall parking lot.

Name:

Scavenger Hunt Project Rubric

Categories	Picture (out of 2 points)	Description (out of 2 points)
1. Right/Acute/Obtuse Triangle		
2. Quadrilateral		
3. Polygon		
4. Collinear Points		
5. Non-collinear points		
6. 2 parallel lines		
7. 2 perpendicular lines		
8. Similar Figures (same shape different size)		
9. A pair of vertical angles formed by 2 intersecting lines		
10. 2 lines cut by a transversal		

1 Page Writing Part (out of 10 points): _____

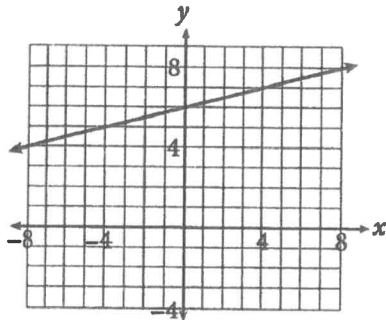
Comments:

Neatness/display of presentation (out of 6 points): _____


Total Points: _____ / 60

II. SAT Practice Set

Easy




- Which of the following equations represents the line shown in the graph?
 - $y = 6x + \frac{1}{4}$
 - $y = \frac{x}{4} + 6$
 - $y = 4x + 6$
 - $y = 6x + 4$
- A lemonade stand's profit is given by the equation $p = 2c - 8.5$. Which of the following does the number 2 most likely represent?
 - The price of one cup of lemonade
 - The profit generated from the sale of one cup of lemonade
 - The minimum number of cups of lemonade that must be sold to earn a profit
 - The costs that must be recuperated before the lemonade stand earns any profits

- 
 Darien needs to buy several white dress shirts for his new job. He finds one he likes for \$35 that is on sale for 40% off. He also likes a blue tie that costs \$21. Which of the following represents the total cost, not including tax, if Darien buys x of the white shirts that are on sale and two of the blue ties?

- $C = 14x + 42$
- $C = 21x + 21$
- $C = 21x + 42$
- $C = 35x + 42$

$$\frac{z}{6} \left(\frac{3}{2} \right) - 7 = -2(3z - 4)$$

- What value of z satisfies the equation above?
 - $-\frac{12}{5}$
 - $-\frac{4}{25}$
 - $\frac{4}{25}$
 - $\frac{12}{5}$

- 
 Line L passes through the coordinate points $\left(-\frac{7}{2}, 3\right)$ and $\left(-\frac{3}{2}, 5\right)$. What is the slope of line L ?

- -1
- $-\frac{2}{5}$
- $\frac{2}{5}$
- 1

$$17(6x - 50) = 204 \left(\frac{7}{24} x \right)$$

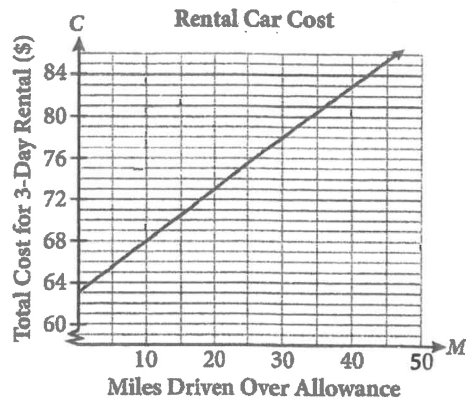
6. For what value of x is the equation above true?



0	1	2	3
4	5	6	7
8	9	0	1
2	3	4	5
6	7	8	9
0	1	2	3
4	5	6	7
8	9	0	1
2	3	4	5
6	7	8	9

Medium

7. Line L has an undefined slope. Line M is perpendicular to line L . Which of the following could be the equation of line M ?
- A) $x = y$
 B) $y = 7$
 C) $x = -3$
 D) $xy = 4$
8. A line in the xy -plane that passes through the coordinate points $(3, -6)$ and $(-7, -4)$ will never intersect a line that is represented by which of the following equations?
- A) $x + 5y = 6$
 B) $x + \frac{y}{2} = 7$
 C) $y - 2x = -9$
 D) $2y - x = -8$




9. A car rental agency charges a per day rental fee which includes a daily mileage allowance plus a certain amount per mile driven over the allowance. The graph above compares the miles driven over the allowance and the total cost for a 3-day rental. What does the C -intercept most likely represent in this scenario?
- A) The per day rental fee for renting the car
 B) The number of miles a renter may drive the car per day
 C) The penalty a renter must pay if the daily mileage allowance is exceeded
 D) The total cost of a 3-day rental assuming the car is not driven over the allowance



$$\frac{2}{3}x + cy = 2$$


10. If the slope of the equation shown above is 6, what is the value of c ?
- A) -4
 B) $-\frac{1}{9}$
 C) $\frac{1}{3}$
 D) 4

11.  Anneke is competing in a 500-meter freestyle swim event, which consists of swimming the length of a pool 20 times. If Anneke averages 26.4 seconds per length of the pool, which of the following equations could be used to determine the number of meters (m) Anneke has left in the event after swimming for s seconds?

- A) $m = 500 - \frac{25s}{26.4}$
 B) $m = 500 - 25s$
 C) $m = \frac{25s}{26.4}$
 D) $m = 500 - 20s$

12. If the graph of the equation $y = 5x + 3$ is shifted down 4 units, what is the x -intercept of the new line?

- A) -1
 B) $\frac{1}{5}$
 C) 1
 D) $\frac{5}{4}$

13.  A new color copier purchased for \$8,500 is expected to depreciate (lose value) according to the equation $y = -1,250x + 8,500$, where y is the value of the copier x years after it was purchased. The company that bought the copier plans to sell it when the value is \$1,000 and upgrade to a new one. How many years after the copier is purchased will the company sell it?

0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

$$\frac{3(h+2)-4}{6} = \frac{h(7 \times 2 - 5)}{2}$$

14. In the equation above, what is the value of h ?

0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

15. If $\frac{2}{3}j - \frac{1}{4}k = \frac{5}{2}$, what is the value of $8j - 3k$?



0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9