

OAKLAND CUSD #5

**ALGEBRA II**  
**MAY 4 - 8, 2020**

EMILY MYERS

## Week of May 4-8, 2020

Ms. Myers

Hello everyone. Choose 2 of the following activities for the class you are enrolled in to complete for this week. All assignments may be turned in via google classroom. Take a picture or scan it in and turn it into the corresponding assignment. Or you may turn in paper copies to the office and they will get them to me. Both choices are due by Monday, May 11 at noon. Be sure to write whatever choice you are doing at the top of your page.

I will be at my computer for questions on Tuesday 10a-12p, Wednesday 3p-5p & Thursday 12p-2p.

**NO WORK = NO CREDIT**

Class	Choice 1	Choice 2	Choice 3	Choice 4	Choice 5
<b>Algebra 2</b>	Water Park Project  Show all work!	Duct Tape/Pencil Pouch Project  Show all work!	Cross Number Wkst  Show all work!	\$1,000,000 Challenge  Show all work!	Geometry Careers Project
<b>Algebra 3/Trig</b>	Complete the assignment that was assigned on Khan Academy.	Water Park Project  Show all work!	Cross Number Wkst  Show all work!	\$1,000,000 Challenge  Show all work!	Geometry Careers Project
<b>Geometry</b>	Year 9 Algebra Revision Sheet  Show all Work!	Duct Tape/Pencil Pouch Project  Show all work!	Cross Number Wkst  Show all work!	\$1,000,000 Challenge  Show all work!	Geometry Careers Project
<b>Tech Math</b>	Duct Tape/Pencil Pouch Project  Show all work!	Year 9 Algebra Revision Sheet  Show all work!	Cross Number Wkst  Show all work!	\$1,000,000 Challenge  Show all work!	Geometry Careers Project

Week of April 6-10  
 Ms. Myers  
**Water Park Project**

Name \_\_\_\_\_

**TASK 1: Designing your Park**

You have recently been hired to create a blueprint for a water park. Your boss, Gelatinous Harrington, is a very controlling person. She wants you to include specific attractions and necessities in your design. Be prepared to answer her questions before you have had enough time to adequately explain what you are doing. First off, she wants it to be done on a large sheet of graph paper so that she can apply her mathematical knowledge to make the park the best it can be. She has issues and will yell at you if you do not do this properly. Before starting your blueprint, identify the center of your paper, and use a ruler to draw in the x and y axes. Then, you need to plot the approximate entrance points (where the line starts!) of each attraction on the graph paper and draw in the remaining part of the attraction around it in a creative fashion. Try to spread them out as much as possible. Use a pencil to draw the items and then go back and color them in with colored pencils.

Items to be included on the design are listed below:

- Help center
- Large whirlpool
- 3 different water slides (use your imagination)
- Toddler area
- Lazy river
- Concessions
- Gift shop
- Restrooms
- Security desk



**TASK 2: Naming Your Coordinates**

After planning out the layout and design of each water park attraction, you must identify its location by using ordered pairs. Use your "entrance points" as the attractions identifiable location, and fill in the chart below accordingly!

Location:	Ordered Pairs:
Help Center	( _____ , _____ )
Large Whirlpool	( _____ , _____ )
Water Slide #1	( _____ , _____ )
Water Slide #2	( _____ , _____ )
Water Slide #3	( _____ , _____ )
Toddler Area	( _____ , _____ )
Lazy River	( _____ , _____ )
Concessions	( _____ , _____ )
Gift Shop	( _____ , _____ )
Restrooms	( _____ , _____ )
Security Desk	( _____ , _____ )

**TASK 3: Calculating the Slope**

After identifying each attraction's location with ordered pairs, you are now ready to calculate the slope between attractions using the slope formula,

$$\frac{Y_2 - Y_1}{X_2 - X_1}$$

Using a RED pencil and a ruler, MARK the direct path to/from the locations mentioned below. Calculate the slope of the line that is formed, and show your work in the space provided.

Help Center to Water Slide #1	Toddler Area to Concessions
Gift Shop to Restrooms	Security Desk to Water Slide #2
Lazy River to Large Whirlpool	Help Center to Gift Shop
Restrooms to Water Slide #3	Concessions to Lazy River
Water Slide #1 to Water Slide #2	Water Slide #2 to Water Slide #3

**Task 4: Writing Linear Equations.**

In task 3 you identified direct paths between various park attractions by drawing them in with red lines. Now, you will show off your skills by writing equations for each of those red lines.

<p>Help Center to Water Slide #1</p> <p>_____</p> <p><math>Y = \underline{\quad\quad} X +</math></p>	<p>Toddler Area to Concessions</p> <p>_____</p> <p><math>Y = \underline{\quad\quad} X +</math></p>
<p>Gift Shop to Restrooms</p> <p>_____</p> <p><math>Y = \underline{\quad\quad} X +</math></p>	<p>Security Desk to Water Slide #2</p> <p>_____</p> <p><math>Y = \underline{\quad\quad} X +</math></p>
<p>Lazy River to Large Whirlpool</p> <p>_____</p> <p><math>Y = \underline{\quad\quad} X +</math></p>	<p>Help Center to Gift Shop</p> <p>_____</p> <p><math>Y = \underline{\quad\quad} X +</math></p>
<p>Restrooms to Water Slide #3</p> <p>_____</p> <p><math>Y = \underline{\quad\quad} X +</math></p>	<p>Concessions to Lazy River</p> <p>_____</p> <p><math>Y = \underline{\quad\quad} X +</math></p>
<p>Water Slide #1 to Water Slide #2</p> <p>_____</p> <p><math>Y = \underline{\quad\quad} X +</math></p>	<p>Water Slide #2 to Water Slide #3</p> <p>_____</p> <p><math>Y = \underline{\quad\quad} X +</math></p>

### Suggested Materials:

- Print pages 1-4 in landscape mode, double side, flip on short edge. (These settings work on my HP LaserJet, you may need to adjust). Fold book in half and staple. Print one per student or group.
- Gallon size plastic storage bags (regular seal and slider seal). Enough for one per student.
- Variety of duct tape (patterns and solid colors)
- Rulers
- Painters tape
- Calculators to check work
- Copy of answer key for teacher or for student self-check
- Scissors
- Heavy duty 3-hole punch

### Prerequisite Skills and Knowledge:

Based on working without a calculator this is a list of knowledge and skills students should have before working on this activity.

- Know Area formula for rectangle **Area=Length x Width**
- Converting numbers: fraction/decimal/percent, mixed number/improper fraction
- Rounding to nearest cent, tenth of a cent

- Find the % of a number
- Unit conversions given conversion factors
- Unit rate/price
- Decimal operation fluency (addition, multiplication, division)

### Project timeline:

Depending on skill level of students, without a calculator, this project generally takes students 2 or 3 class periods (50 minutes) to complete.

### Lesson Suggestions:

- Begin the project by discussing the startup of a fictitious student business that makes and sells pencil pouches made of duct tape. Invite students to guess how much it would cost to make and how much they should sell for in retail stores. Post guesses in classroom.
- Next I place students into pairs and have them come up with a name for their company and decorate the front cover with their business name and/or logo. I also give small pieces of duct tape if they want to include on cover to get them interested.
- Students complete the word problems practicing skills in computation, area, and percent word problems. I have students compute without a calculator and check with calculator or answer key at each step (to ensure accuracy as many steps build upon previous answers), but those are all teacher decisions. You

7/19/2015  
Myers  
Choice 2

5/13

may want to have students compute on scrap paper or on white boards and transfer to booklet when correct.

-Once a pair of students complete all questions correctly I give them a printed sheet with directions to make the pencil pouch (see "How to Make Duct Tape Pencil Pouch" in zip folder). I let students select the type of bag they calculated costs for in the activity. I allow each student to make one pouch.

-If time allows I have had students make extra pencil pouches to donate to our student service center for students needing school supplies.

-If allowed at your school, offer students extra credit or free time to bring in supplies (bags, a roll of duct tape, etc.).

-I allow students one solid color and one pattern when constructing their pouches. No more than  $\frac{1}{2}$  the area can be patterned as it is more expensive.

-I have better luck ripping the duct tape than cutting. Scissors get all sticky by end of day. You may need to demonstrate this skill to students.





4. If you unroll a roll of duct tape it would be 15 yards x 1.88 inches. There are 3 feet in every yard, and 12 inches in every foot.

a. Convert 15 yards into feet.

b. Next convert the answer from above into inches.

c. Now find the area that the roll of duct tape will cover in square inches.

5. A roll of duct tape costs \$5.29 including tax. What is the cost per square inch? **Round to the nearest tenth of a cent.**

6. Using the total surface area of your bag (Step 3) and the cost of duct tape per square inch (Step 5) find the cost to cover your entire bag in duct tape. **Round to the nearest cent.**

7. Regular bags are sold in a box with 38 bags for \$5.09 per box. Slider bags are sold in a box of 30 for \$5.29 per bag. For each type of bag, what is the price per bag? **Round to the nearest cent.**

8. An employee can make 6 pencil pouches in an hour. Your company pays a minimum wage of \$7.25 per hour. What is the average amount the employee earns per pencil pouch? **Round to nearest cent.**

9. Decide which type of bag to produce. \_\_\_\_\_  
What is the total cost to produce 1 pencil pouch (materials and labor)?

10. The finance manager insists that the company needs to sell the pencil pouches for 85% more than they cost to produce to be profitable. Find 85% of the total cost. **Round to nearest cent.**

11. What is the total price that your company will sell the pencil pouches to retailers for to ensure that you earn an 85% profit on the pencil pouches?

HLg 2.  
Myers  
Choice 2

12. Retailers selling your pencil pouches need to make a profit as well. To assist retailers in pricing please calculate three suggested retail prices including 35%, 45%, and 50% profit.

13. **Reflections:** Reflect on how this activity relates to real business practices. What other factors not included in this activity might a business consider when making and pricing their goods for sale to retailers?

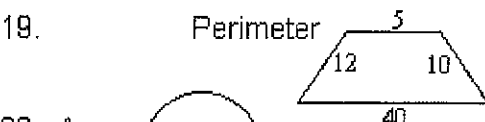
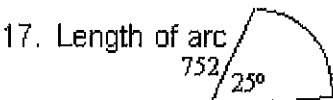
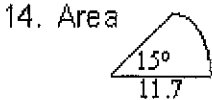
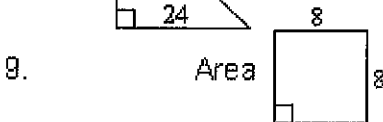
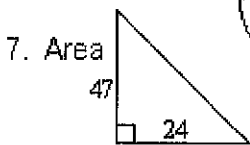
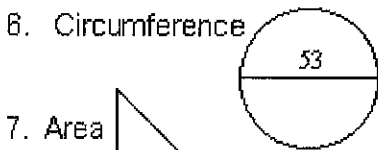
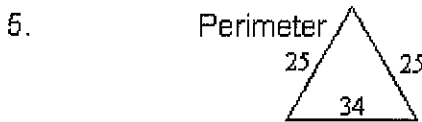
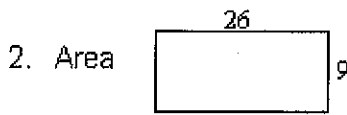
1. #19, 2  
Miyers  
Choice 2

CROSSNUMBER

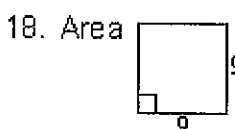
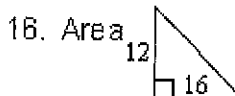
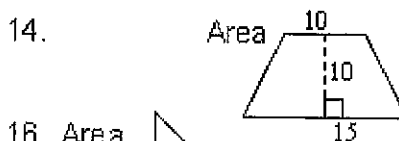
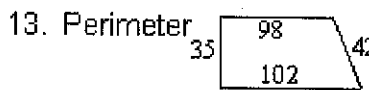
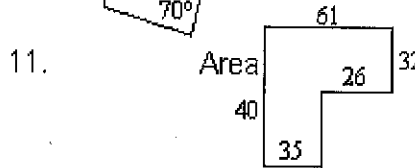
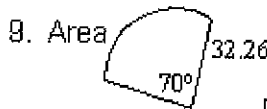
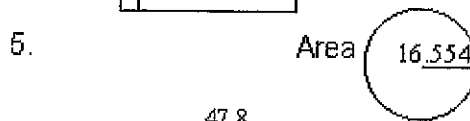
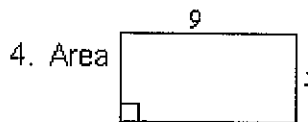
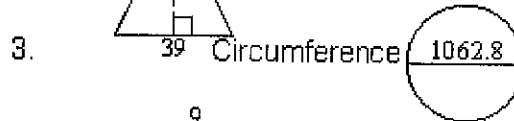
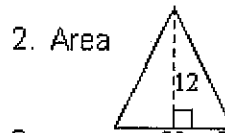
1	2	3	4	5	
6			7		8
9		10	11		
12	13			14	
15		16	17		18
19		20			

Round your answers to the nearest whole number

Across



Down



Alg 2

Myers choice 4

## **\$1,000,000 Challenge**

Imagine getting a letter that states:

12x13

Congratulations! You have inherited \$300,000,000. However, there is a stipulation. You have exactly 30 days to spend exactly \$1,000,000; no more, no less. If you complete this challenge you will receive the \$300,000,000.

You may not donate more than 10% to charity. You may not put it in the bank to collect interest. You may not give it away to friends or family.

Make a presentation of everything you spend the money on with pictures showing the prices of your purchases. This will also include what you eat during this month and activities that you participate in.

You may do this on a poster or in google slides. You must also include a page of all of the calculations.

Alg 2

Myers

Choice 5

## Geometry Careers Project

You are always asking "When will we ever use this?"

Here is your chance to tell me why.

Bob

Research 5 careers that use geometry. Find different characteristics about each career such as salary, schooling, and job description. Draw or print a picture of each career. Put all of the information on a poster board. Be sure to cite your sources. Remember: NO plagiarism! You may turn in the poster to the school or take a picture of it and turn in the picture.

### **OR**

Research 5 careers that use geometry. Find different characteristics about each career such as salary, schooling, and job description. Make a google slides presentation of the information. Be sure to cite your sources. Remember: NO plagiarism!