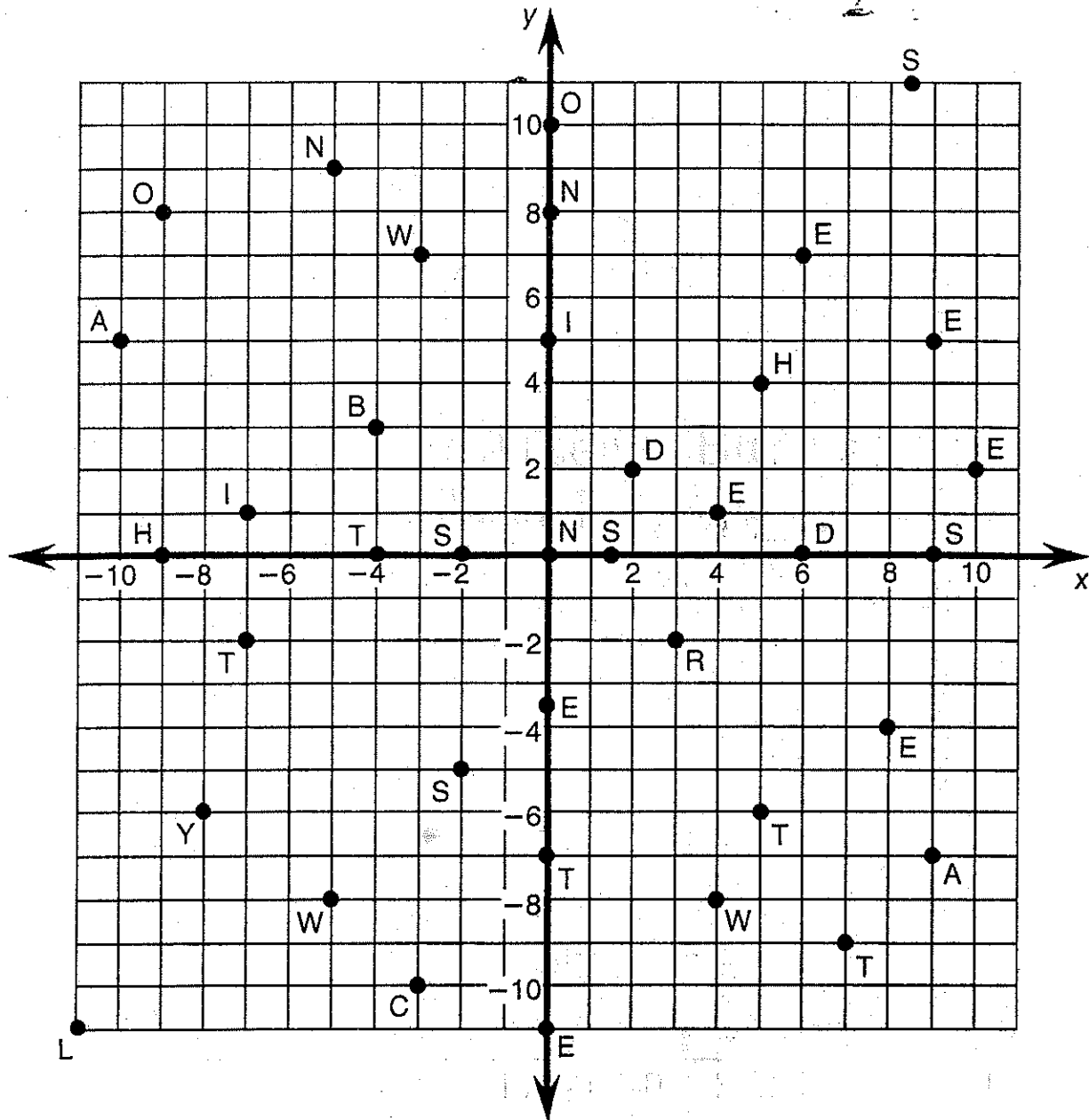


# What Happened After a Burglar Broke Into a Tuba Factory?

Each ordered pair at the bottom of the page represents a point on the coordinates below. Above each ordered pair, write the letter that appears at that point.



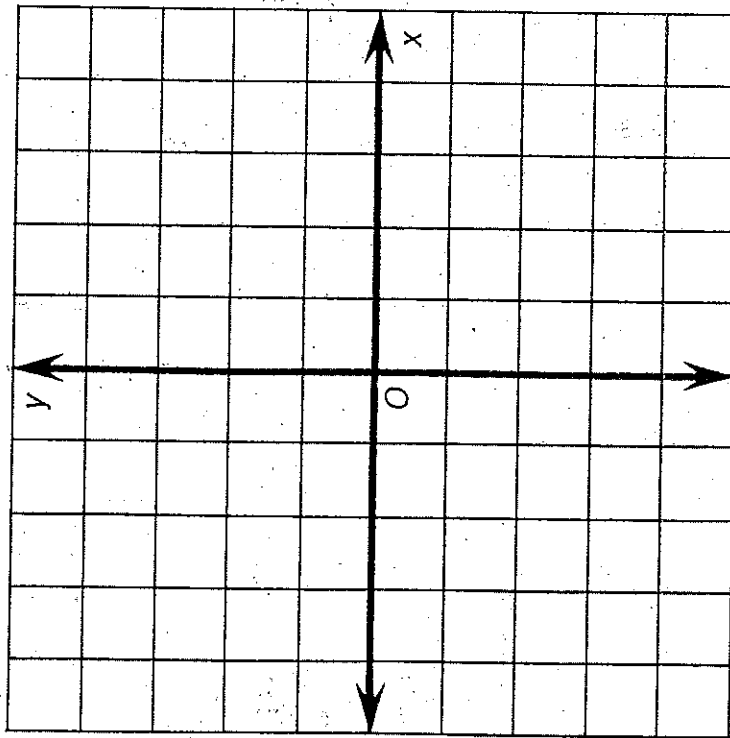
(5, 4)(10, 2)(-3, 7)(-10, 5)(-2, -5)(-3, -10)(3, -2)(8, -4)(6, 0)(0, 5)(-4, 0)(0, -11)(2, 2)

(-5, -8)(-7, 1)(7, -9)(-9, 0)(-7, -2)(4, -8)(6, 7)(-5, 9)(0, -7)(-8, -6)(0, 10)(0, 0)(9, 5)

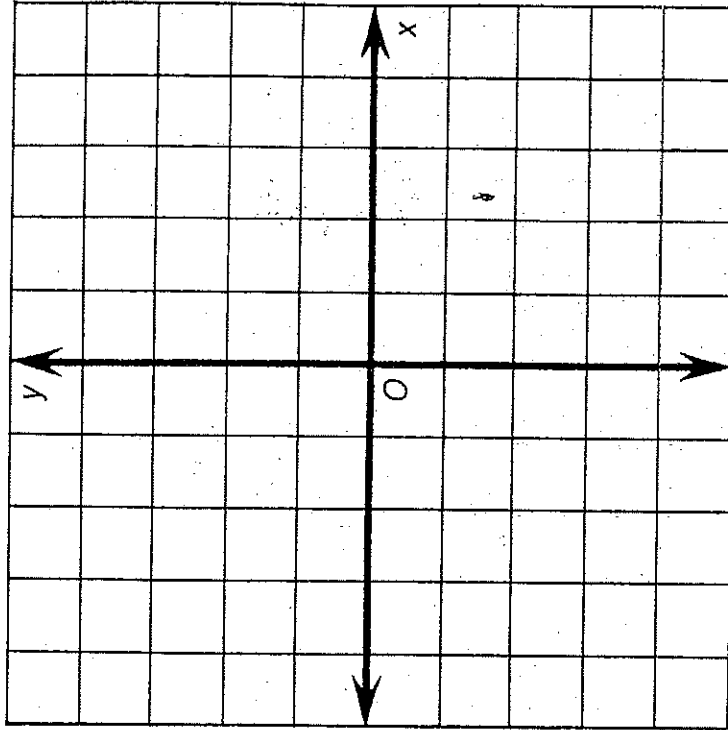
(9, 0)(5, -6)(-9, 8)(-11, -11)(4, 1)(0, 8)(-4, 3)(9, -7)(-2, 0)(8.5, 11)(0, -3.5)(1.5, 0)

# What Might You Have If You Don't Feel Well?

For each exercise, draw a line through the two given points. Determine the slope of this line. Find your answer at the bottom of the page and write the letter of that exercise above it.



- E (1, 2) and (4, 4)
- G (-4, -2) and (2, -5)
- O (3, -3) and (4, 1)
- S (-2, 4) and (0, -2)



- C (0, -1) and (4, 3)
- V (-1, 0) and (-3, 4)
- N (-5, 2) and (-3, -3)
- L (5, -1) and (-2, -4)

$\frac{4}{-3}$	$1\frac{1}{2}$	$\frac{3}{7}$	1	-2	$\frac{2}{3}$	$-\frac{3}{3}$	$\frac{7}{3}$	4	$-\frac{5}{2}$
									0

# BEN FRANKLIN'S FOLLY

## Directions:

Plot the ordered pairs of numbers on a graph in the order they are listed connecting them with line segments as you plot them. Start a new line after the words "LINE ENDS".

$(-20, -5)$

$(-1, 9)$

$(5, 14)$

LINE ENDS

$(-1, 9)$

$(0, 3)$

LINE ENDS

$(-4, -7)$

$(15, 5)$

$(10, 25)$

$(-5, 15)$

$(-4, -7)$

$(-4, -9)$

$(-3, -14)$

$(0, -20)$

$(0, -21)$

$(-1, -24)$

$(-2, -25)$

LINE ENDS

$(-2, -9)$

$(-5, -15)$

$(-6, -12)$

$(-1, -12)$

$(-2, -9)$

LINE ENDS

$(0, -14)$

$(-3, -19)$

$(-5, -17)$

$(1, -17)$

$(0, -14)$

LINE ENDS

$(2, -20)$

$(-3, -24)$

$(-4, -22)$

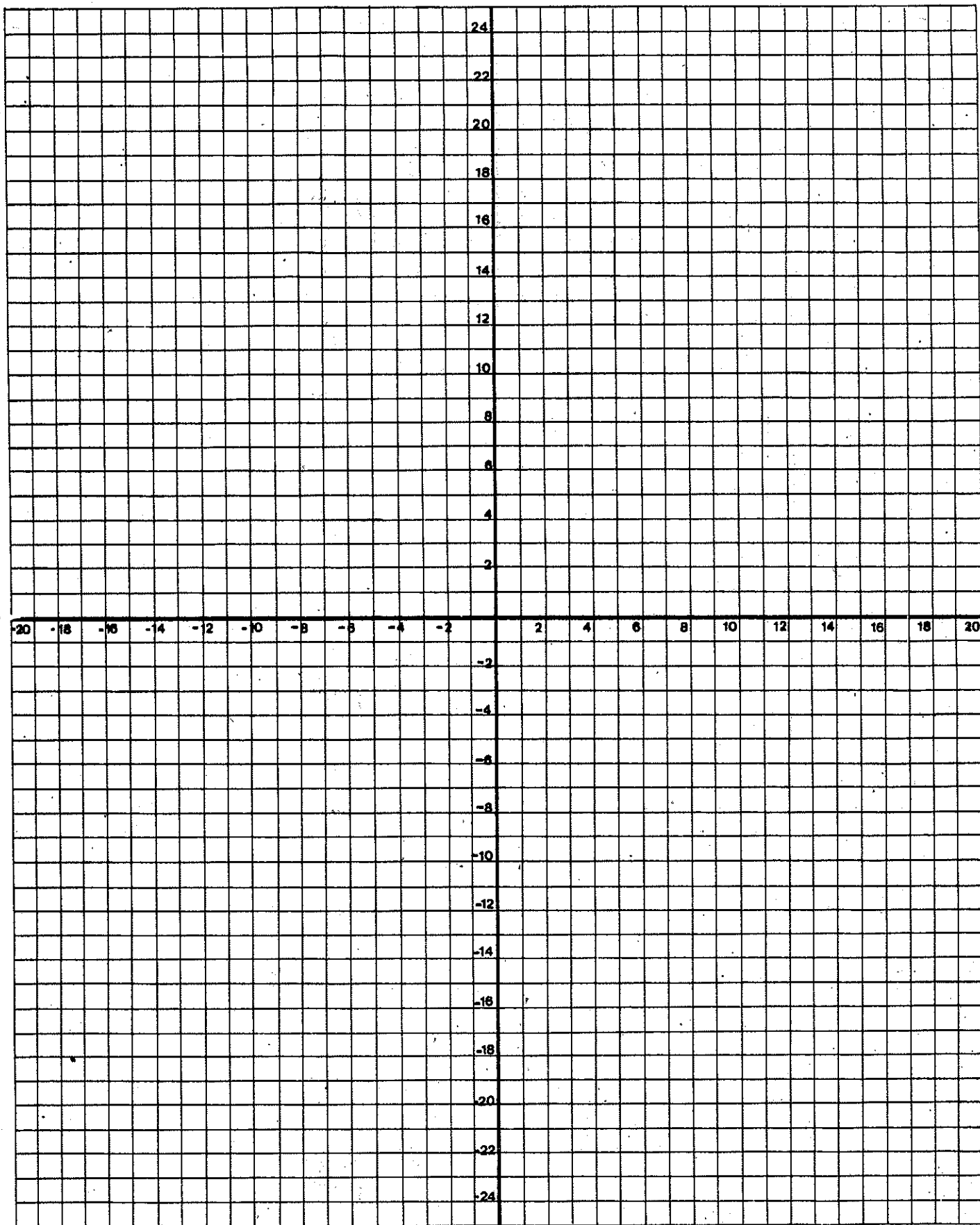
$(3, -22)$

$(2, -20)$

LINE ENDS

# Mr Little Math

Name \_\_\_\_\_



# EUREKA!

## Directions:

Plot the ordered pairs of numbers on a graph in the order they are listed connecting them with line segments as you plot them. Start a new line after the words "LINE ENDS".

(-12, -15)

(-13, -17)

(-13, -18)

(-2, -18)

(-2, -12)

(-8, -12)

(-10, -15)

(-17, -15)

(-18, -17)

(-18, -18)

(-13, -18)

LINE ENDS

(-15, -15)

(-13, -12)

(-8, -12)

LINE ENDS

(-3, -12)

(-3, 14)

(2, 18)

(3, 17)

(-2, 13)

(-2, -12)

LINE ENDS

(-2, 12)

(0, 12)

(2, 11)

(10, -11)

(11, -13)

(13, -16)

(16, -18)

(17, -18)

LINE ENDS

(-2, 11)

(-1, 8)

(1, 4)

(2, -1)

(2, -11)

(1, -13)

(-2, -15)

LINE ENDS

(-2, -13)

(0, -11)

(0, 6)

LINE ENDS

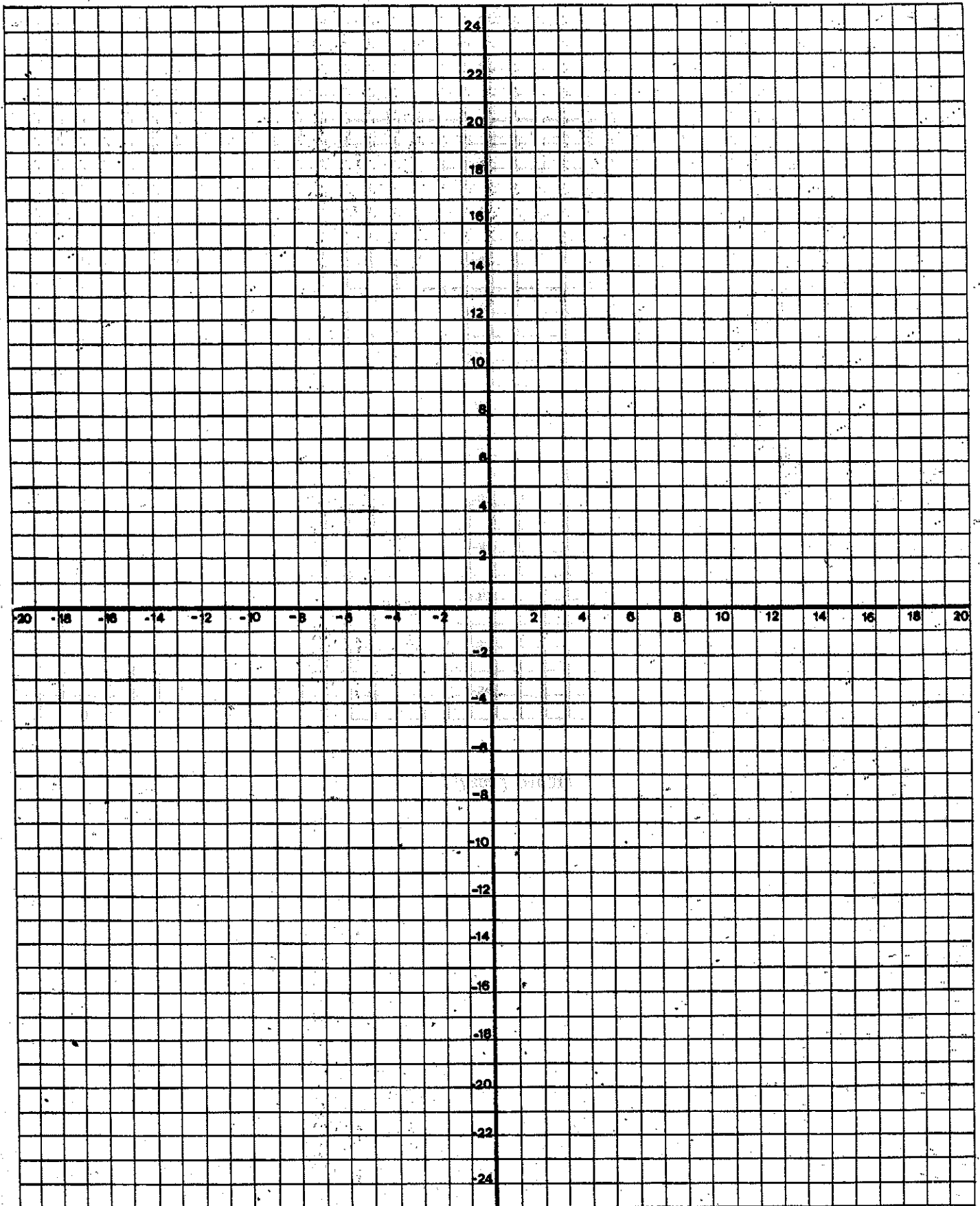
(-1, 8)

(-1, -12)

LINE ENDS

# Mr Little Math

Name \_\_\_\_\_



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

Algebra I  
Exponential Growth and Decay

Week 2 assignment

Exponential Growth and Decay Formula:

Initial Starting Value

# of times it grows or decays

$$y = ab^x$$

Growth/Decay Factor

**Exponential Growth Example 1**

Don't forget to change the percent to a decimal

The population in New York was 19,440,469 and it increases at a rate of 9%

**Initial Value:** 19,440,469

**Exponential Factor:** 9% = .09 = 1 + .09 (because we have a growth function we add 1) = 1.09

**Equation:** 19,440,469(1.09)<sup>x</sup>

**Exponential Decay Example 2**

Michelle recently purchased a new car for \$24,000. The car she bought is expected to decrease in value 5.4% each year.

**Initial Value:** 24,000

**Exponential Factor:** 5.4% = .054 = 1 - .054 (because we have a decaying function we subtract 1) = .946

**Equation:** 24,000(.946)<sup>x</sup>

1. The original price of a tractor was \$44,000. The value of the tractor decreases at a steady rate of 10% per year.

**Initial Value:**

**Exponential Factor:**

**Equation:**

2. The population in California was 39,937,489 and it increases at a rate of 7%

**Initial Value:**

**Exponential Factor:**

**Equation:**

3. A culture starts with 30 bacteria and it increases 1.5% each hour.

**Initial Value:**

**Exponential Factor:**

**Equation:**

4. A new car costs \$22,000. It is expected to depreciate 12% each year.

**Initial Value:**

**Exponential Factor:**

**Equation:**

5. The population of a city was 12,100 and has been increasing at an average rate of 1%.

**Initial Value:**

**Exponential Factor:**

**Equation:**

6. Kevin bought a condominium for \$120,000 in 2000. If its value increases at an average rate of 10% per year.

**Initial Value:**

**Exponential Factor:**

**Equation:**

7. You deposit \$600 into a savings account. Every year that account increases by 4.7 % interest rate.

**Initial Value:**

**Exponential Factor:**

**Equation:**

8. Kevin recently purchased a new car for \$30,806. The car he bought is expected to decrease in value 4% each year.

**Initial Value:**

**Exponential Factor:**

**Equation:**

9. An adult takes 500 mg of ibuprofen. Each hour, the amount of ibuprofen in the person's system decreases by about 30%.

**Initial Value:**

**Exponential Factor:**

**Equation:**

10. You drink a beverage with 220 mg of caffeine. Each hour, the caffeine in your system decreases by about 15%.

**Initial Value:**

**Exponential Factor:**

**Equation:**



**If you have questions or concerns with your assignments, you can contact your teacher through the remind app or email.**

**Ms. Campbell:** [hcampbell@mpisd.net](mailto:hcampbell@mpisd.net)

Geometry – Remind Code [@hcampalg2](#)

Algebra 2 – Remind Code [@hcampgeo](#)

**Coach Woods:** [dwoods@mpisd.net](mailto:dwoods@mpisd.net)

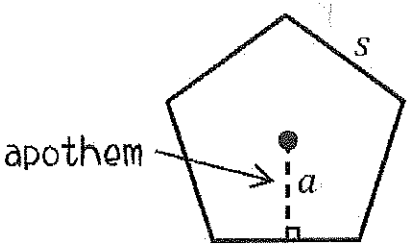
Geometry – Remind Code [@woodsge](#)

Math Models – Remind Code [@woodsmmod](#)

## GEOMETRY

### Area of Regular Polygons

**Regular Polygon**



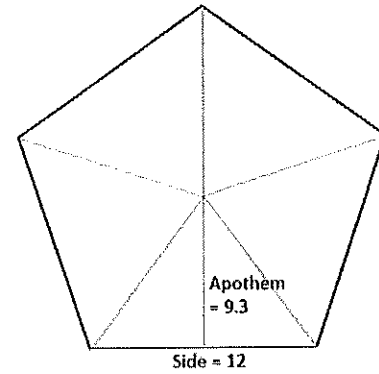
$n$  = number of sides  
 $a$  = apothem  
 $s$  = side length  
 $P$  = perimeter

**Formulas:**

$$P = \frac{s \cdot n}{1}$$

$$A = \frac{1}{2} \cdot a \cdot P$$

Examples:

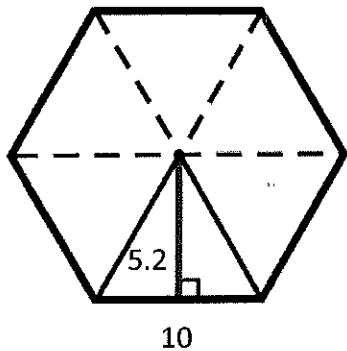


$$P = s \times n$$

$$P = 12 \times 5 = 60$$

$$A = \frac{1}{2} \times a \times P$$

$$A = \frac{1}{2} \times 9.3 \times 60 = 279$$

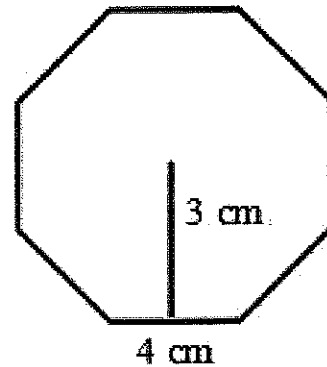


$$P = s \times n$$

$$P = 10 \times 6 = 60$$

$$A = \frac{1}{2} \times a \times P$$

$$A = \frac{1}{2} \times 5.2 \times 60 = 156$$



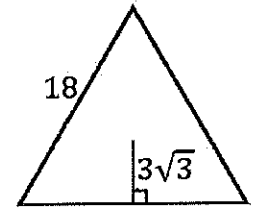
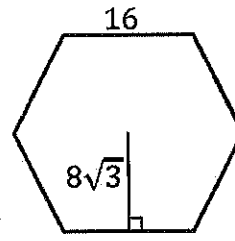
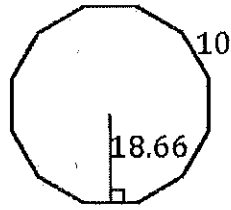
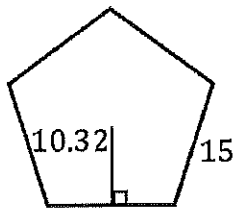
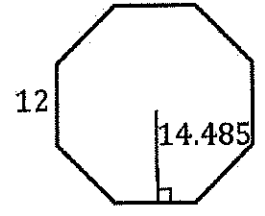
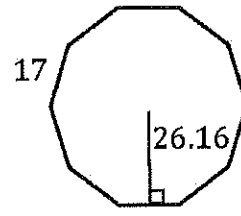
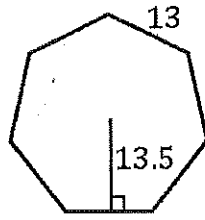
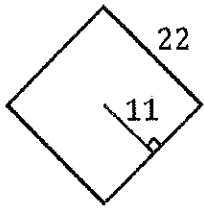
$$P = s \times n$$

$$P = 4 \times 8 = 32$$

$$A = \frac{1}{2} \times a \times P$$

$$A = \frac{1}{2} \times 3 \times 32 = 48$$

Practice: Given a side length and apothem, calculate the perimeter and area for each regular polygon.



# Math Models - Week 2

Coach Woods Remind code: @woodsmmod

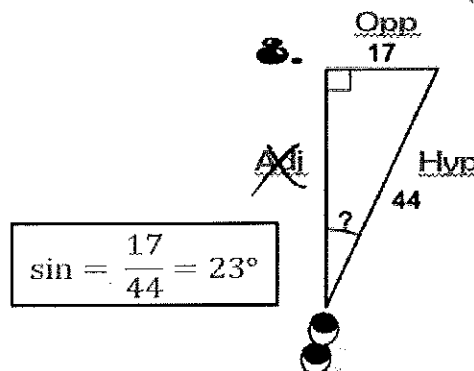
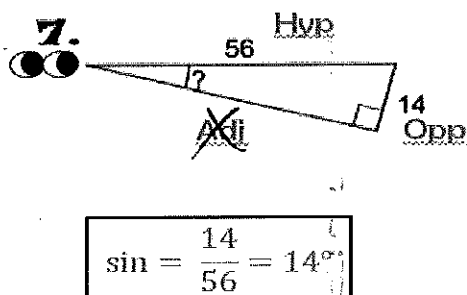
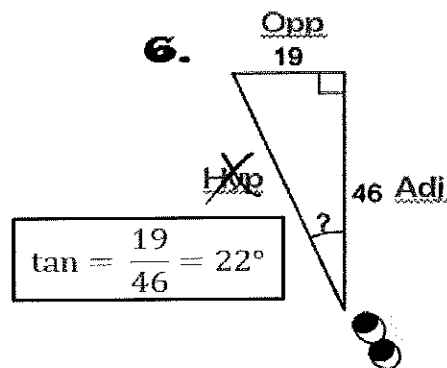
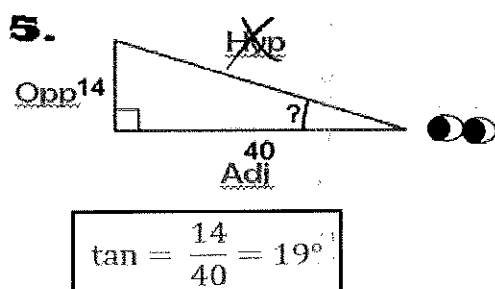
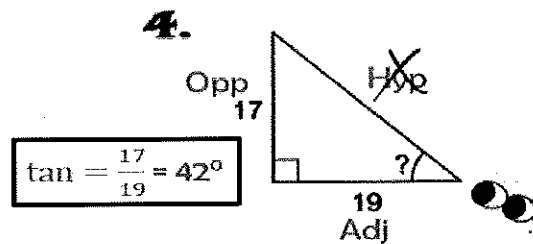
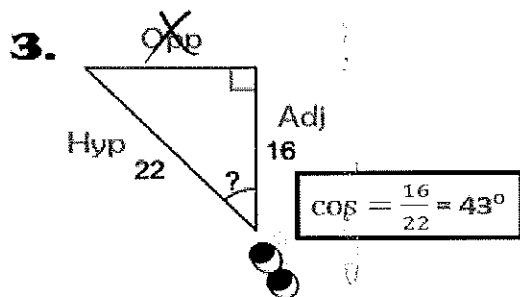
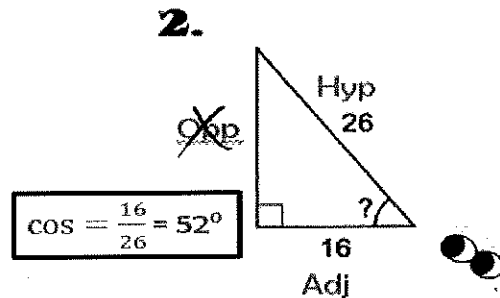
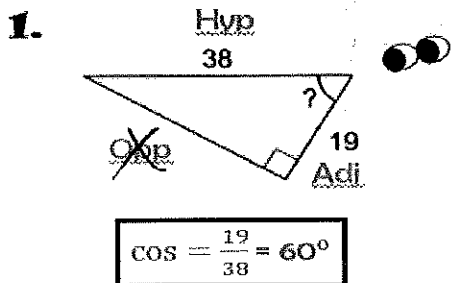
Notes: Using Trig Functions to find missing angles.

Step 1: Label the sides Hyp, Opp, Adj.

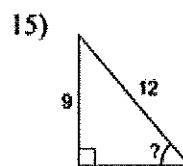
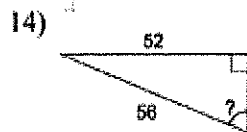
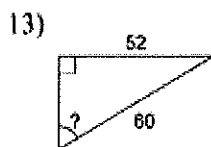
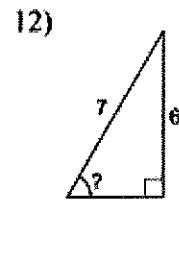
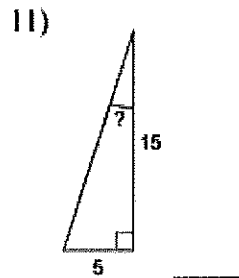
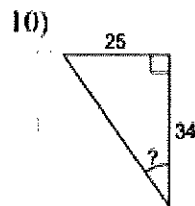
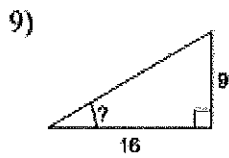
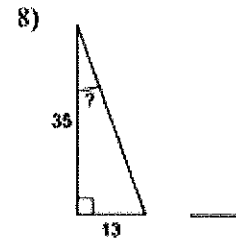
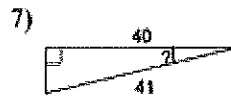
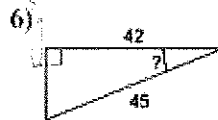
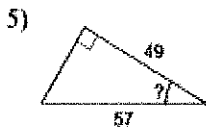
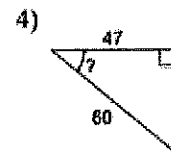
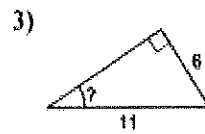
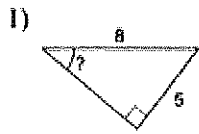
Step 2: Mark out the side that has no measure.

Step 3: Choose your trig function and build your fraction.

\* Remember: 2<sup>nd</sup> before trig function in calculator



Find the measure of the indicated angle. Round your answer to the nearest degree.



## Algebra 2 & Pre-Calculus

### Imaginary & Complex Numbers Notes

Note that  $i^2 = -1$

You can watch video lessons over this topic at this website

<https://www.khanacademy.org/math/algebra2/x2ec2f6f830c9fb89:complex>

Examples:

1.  $\sqrt{-16}$

$$\boxed{4i}$$

2.  $\sqrt{-24}$

$$\begin{array}{l} \sqrt{-4} \cdot \sqrt{6} \\ \text{Perfect Not} \\ \boxed{2i\sqrt{6}} \end{array}$$

3.  $\sqrt{-75}$

$$\begin{array}{l} \sqrt{-25} \cdot \sqrt{3} \\ \text{Perfect Not} \\ \boxed{5i\sqrt{3}} \end{array}$$

4.  $i^{10}$

$$\begin{array}{l} (i^2)^5 \\ (-1)^5 \text{ use calc} \\ \boxed{-1} \end{array}$$

5.  $i^{22}$

$$\begin{array}{l} (i^2)^{11} \\ (-1)^{11} \\ \boxed{-1} \end{array}$$

6.  $i^9$

$$\begin{array}{l} (i^2)^4 \cdot i \\ \text{one left over} \\ (-1)^4 \cdot i \\ 1i \\ \boxed{i} \end{array}$$

7.  $i^{15}$

$$\begin{array}{l} (i^2)^7 \cdot i \\ (-1)^7 \cdot i \\ -1i \\ \boxed{-i} \end{array}$$

# Alg 2 and Pre Calculus Homework

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

## Imaginary Numbers WS

1.  $\sqrt{-9}$

2.  $\sqrt{-121}$

3.  $\sqrt{-20}$

4.  $\sqrt{-40}$

5.  $\sqrt{-98}$

6.  $-\sqrt{-48}$

7.  $i^{11}$

8.  $i^{13}$

9.  $i^{12}$

10.  $i^{20}$

## AQR - Weighted Averages in Grades

### #1 Final Grade Averages

Ashley is a student at Mount Pleasant High School enrolled in AQR. She carefully keeps track of all her grades for the first unit and records them in the chart shown.

1. Calculate the average of the following grades (assuming all grades are equally weighted). In the space to the right of the table, explain what process you would use to get your answer.

Assignment	Grade
HW 1-1	100
HW 1-2	100
HW 1-3	105
HW 1-4	96
HW 1-5	97
HW 1-6	100
Quiz #1	68
Quiz #2	84
Test #1	78
HW 2-1	100
HW 2-2	100
HW 2-3	0
HW 2-4	96
HW 2-5	78
Quiz #3	80
Quiz #4	92
Test #2	84

Average =

When Ashley looks on HomeAccess she is shocked to see that her current average is 83. She is convinced that her teacher has made a mistake and decides to go to school early the following morning to discuss the matter. When Ashley gets to school, she talks with her AQR teacher about her average. Her teacher explains that grades in AQR are weighted. In other words some grades are worth more than others.

#### How grades are weighted in AQR:

Homework is worth 25% of the total average

Quizzes are worth 25% of the total average

Tests are worth 50% of the total average

2. Step One - Calculate the HW average:
3. Step Two - Calculate the Quiz Average
4. Step Three - Calculate the Test Average
5. Ashley's Average using weighted averages:
6. Explain the process used to calculate the weighted average.



## #2 Grade Point Average

The weighted average of a set of numbers is a special kind of average, in which some elements of the set carry more weight than others. One use for this is calculating a Grade Point Average (GPA).

The credit hours in the table below are the weight. Calculate the (Grade Point)(Credit Hours) for each course and fill in the table. The GPA for this semester is:

$$GPA = \frac{\text{Total of (Grade Point)} * (\text{Credit Hours})}{(\text{Total Credit Hours})}$$

Course	Letter Grade	Grade Point	Credit Hours	(Grade Point)( Credit Hours)
Computers & Problem Solving	B <sup>+</sup>	3.5	3.0	
Calculus II	B	3.0	4.0	
PE	C <sup>+</sup>	2.5	1.0	
Religions of the East	A	4.0	4.0	
Russian II	B	3.0	3.0	
Total				

1. Calculate this student's GPA.

## Weighted Averages in Sports

### #3 Slugging Averages

One example of a weighted average in sports is a batter's slugging average (or percentage) in baseball. The slugging average (SLG) is calculated using the following equation:

$$SLG = \frac{(1 \cdot S) + (2 \cdot D) + (3 \cdot T) + (4 \cdot HR)}{AB}$$

Where S = singles, D = doubles, T = triples, HR = home runs, and AB = total at-bats

Each single has a weight of 1, each double a weight of 2, each triple a weight of 3, and each home run a weight of 4. An at-bat without a hit has a weight of 0.

In his first season with the New York Yankees, Babe Ruth set a record for slugging average that stood for more than 80-years. In 1920, Ruth pounded 172 hits in 458 at-bats. His hits consisted of 73 singles, 36 doubles, 9 triples, and 54 home runs, resulting in a total base count of  $(73 \cdot 1) + (36 \cdot 2) + (9 \cdot 3) + (54 \cdot 4) = 388$ . When his total number of bases (388) is divided by his total at-bats (459), the result is .847, his slugging percentage for the season. This record was broken in 2001 by Barry Bonds, who had 411 total bases in 476 at-bats for a slugging average of .863. ([www.baseball-almanac.com](http://www.baseball-almanac.com))

1. Find the slugging average for a player with the following statistics:

$$S = 85 \quad D = 29 \quad T = 3 \quad HR = 44 \quad AB = 489$$

**Dual Credit Algebra II Mrs. Russell**

**Info for at Home Assignments**

**Week 2**

Hi guys! I hope everything went well last week. All of our assignments will now be located in MyMathLab. You will need to be sure that you are checking MML, Remind, and your email (the one that you set up in MML for our communications) REGULARLY for messages for me. Please be sure that you are watching the deadlines for your assignments.

If you have not started working on your assignments, your Orientation assignment is due on March 31 and your first assignment is due on April 1.

Have a great week! Stay healthy!

Mrs. Russell

**AP Statistics Mrs. Russell**  
**Info for at Home Assignments**  
**Week 2**

Hi guys! I hope everything went well last week. I will be sending your assignments this week and all following weeks on Remind and on your email. Please be sure to check both places regularly for messages from me.

Have a great week! Stay healthy!

Mrs. Russell

## Pre-Calculus Dual Credit Mrs. Jenkins

### Info to begin Online Instruction

#### How to Get Started

YOU ARE REQUIRED TO DO THESE ASSIGNMENTS!!! THEY ARE FOR A GRADE!!!

Hi guys! I know this is going to be a bit strange to “learn” at home, but I know you can do this. I’m going to try to make it as understandable as I can, but you are going to have to do your part and work hard.☺ Please remember that this is a dual credit class, so not only do we have to meet the high school requirements, we also have to meet the college requirements.

Instruction and assignments will be delivered through the online math product called MyMathLab. This product will allow me to give you videos to watch as well as tutorials and examples for the homework problems. Below will give you instructions on how you need to begin. I suggest you print these out so that you have them to look at while you are getting everything set up.

1. You will need to access MyMathLab through your Blackboard class at the NTCC website. Go to [www.ntcc.edu](http://www.ntcc.edu)
2. When you get to the NTCC homepage, look at the very top of the screen and click on myEaglePortal.
3. Now login to your portal. Your login will be your NTCC email address. If you don’t know what it is, it should be your 1<sup>st</sup> initial of your first name + last name + last three digits of your social security number. (Don’t put + signs and be sure to use your real first name if you actually go by your middle name or something.) Your password is your birthdate in the form MMDDYYYY.
4. Now click on student on the top row of the screen.
5. Now look at the left side of the screen under Quicklinks. You will click on Blackboard.
6. When you get to Blackboard, you will need to scroll down and find our course. It will be titled PreCalculus – MATH 2312. Click on it.
7. Now you are in our course. You should see a homepage with my name on it and underneath that section, you will see a section title **How do I get started now that Dual Credit is online???**
8. Read and follow the instructions in that section to get your MyMathLab set up and running.
9. After you get your MyMathLab set up, you will need to come back to your blackboard daily (using the instructions above) to access your instruction and your assignments.
10. I can’t emphasize enough how important it is for you to check your email (the one you put in MyMathLab) DAILY because that is how I will communicate with you. Please make it send notifications to your phone so that you will see my emails immediately.

## Now that I have everything set up and ready to go, what do I do??

1. If you have exited out of MML, get back in it. (Go to [www.ntcc.edu](http://www.ntcc.edu), login, click on student, click on blackboard, click on our course, then click on MyMathLab in the upper left side of the screen).
2. Click on My Lab and Mastering Home
3. You will see a calendar at the top of the page. This is where you can view what is due each week. If you click on the dots on the date, it will show you the exact assignments that are due for that day. (You cannot wait until that day to access the assignments. You must get started on those at the beginning of the week on Monday so that you have plenty of time to complete everything before the due date).
4. There will be Concept Mastery and Homework each week for the sections.
  - You need to complete the concept mastery assignments first because that is where you will find the video instructions. You may work on the problems an unlimited number of times to learn the material and get the correct answers. (So, you should get 100 on each concept mastery).
  - After completing the concept mastery assignments for the week, now go to the homework assignment. You have unlimited attempts to work each problem. You can view the tutorial material that goes with the problem such as “Help me work this” or “Show Me an Example”. (Keep in mind, though, that these tools will not be available when we take the test over the material. These are learning tools for help when learning the material).
  - When you finish all assignments for the week, then you can wait until assignments are made available for the next week. I will send you an email reminder that they are ready.

If you haven't received any Remind messages from me yet, please set your Remind to give you notifications. If you aren't signed up for Remind, you need to contact me about that.

Changes may come for the following weeks. We are operating on a week to week basis right now.

I know that you can do a good job with this. Feel free to collaborate with your classmates, but continue with social distancing. So, just Facetime each other or something. You can also look up additional videos on youtube if needed. If you need me, you can send me a Remind message or an email from your MML homework problem.

Good luck! Have a great week!

Mrs. Jenkins

# AP Calculus

You will be receiving your assignments through REMIND. You are all signed up for REMIND and are receiving assignments. If yours is not working or you cannot see the assignments, email me at [sjenkins@mpisd.net](mailto:sjenkins@mpisd.net), and I will send an email.

This week you will be making sure the Integration by Parts and Separation of Variables assignments are done. You will be receiving by REMIND a review for Integration by Parts and Separation of Variables. That means a test is coming soon.

# AP Calculus

## Integration by Parts / Separation of Variables Review

$$\textcircled{1} \int x \ln x \, dx$$

$$\textcircled{9} \frac{dy}{dx} = \frac{x}{y} \quad y=4 \quad x=3$$

$$\textcircled{2} \int x^3 \cos x \, dx$$

$$\textcircled{10} \frac{dy}{dx} = \frac{3x^2+1}{2y} \quad f(1)=4$$

$$\textcircled{3} \int \tan^{-1} x \, dx$$

$$\textcircled{11} \frac{dy}{dx} = \frac{2x}{e^{2y}} \quad x=0 \quad y=0$$

$$\textcircled{4} \int x^3 e^{2x} \, dx$$

$$\textcircled{12} \frac{dy}{dx} = (y+3)(x+4) \quad y=1 \quad x=0$$

$$\textcircled{5} \int x \sec^2 x \, dx$$

$$\textcircled{6} \int e^x \sin x \, dx$$

$$\textcircled{7} \int_1^2 x \sec^{-1} x \, dx$$