Welcome to: Algebra 2A

I'm Mr. Cedarlund

Go pick up your textbook

Algebra 2 - Volume 1

Textbook pick up at :

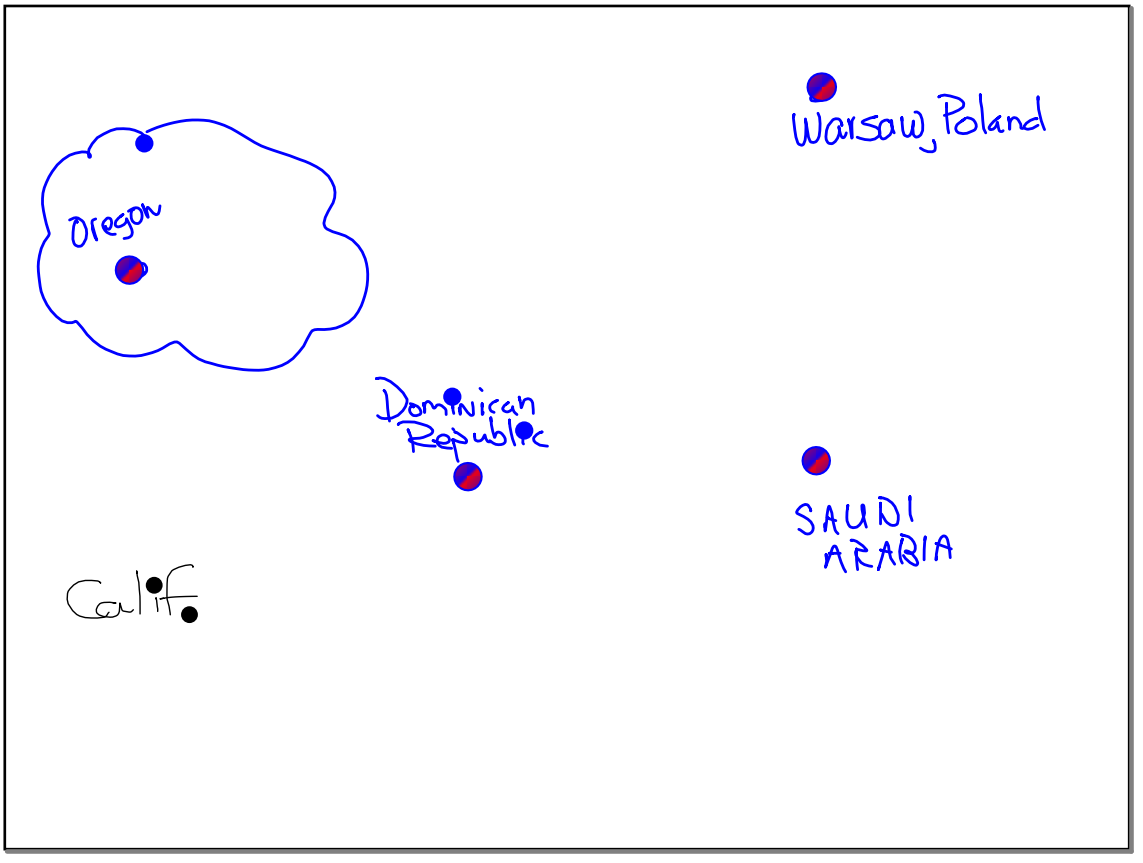
~~10:00~~ AM

9:55

Cedarlund

Cederland

Used to teach at Willagillespie Elem.



Introduce yourselves to each other in your pods or pairs.

Desert Island

Each person goes around the circle (class) and says one thing they would take with them.

The next person must then name the items before them and add their own item on.

Two groups, one at a time.

A little about this class.

Algebra 2 might be a step up in complexity for difficulty compared to Algebra 1.

Every single one of you can learn algebra if the conditions are right for you and you work hard.

For most students, it requires giving a significant effort both in class, effort out of class, and not being absent.

For many students, it means getting extra help outside the classroom on a regular or semi-regular basis.

Things you should know about me.

- I Work Hard
- I know what I am doing
- Patient
- Fair
- I teach in different ways
- I expect a lot of you in class and out of class.
- I do "Brain Breaks"

We'll start with Ch. 1

Review of Transfer Skills from Algebra and Geometry

* Reference Sheet *

Pick Up the

ALGEBRA PAST LIFE warm Up

MATH NOTES

METHODS AND MEANINGS

Linear Equations

A **linear equation** is an equation that forms a line when it is graphed. This type of equation may be written in several different forms. Although these forms look different, they are equivalent; that is, their graphs are all the same line.

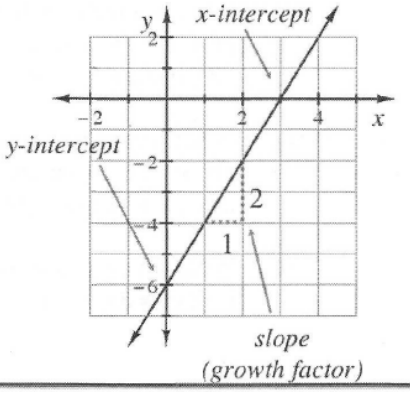
Standard Form: An equation in $ax+by=c$ form, such as $6x-3y=18$.

Slope-Intercept Form: An equation in $y=mx+b$ form, such as $y=2x-6$.

You can find the **slope** (also known as the **growth factor**) and the ***y*-intercept** of a line in $y=mx+b$ form quickly. For the equation $y=2x-6$, the slope is 2, while the y-intercept is $(0,-6)$.

$y = 2x - 6$ ← *y-intercept*

slope



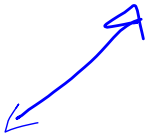
slope

y-axis intercept

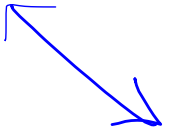
$$y = mx + b$$

$$\text{Slope} = \frac{\Delta y}{\Delta x} = \frac{\updownarrow}{\leftrightarrow} \quad \frac{1}{3}$$

positives slopes



negative slopes



Algebra Past Life Warm Up

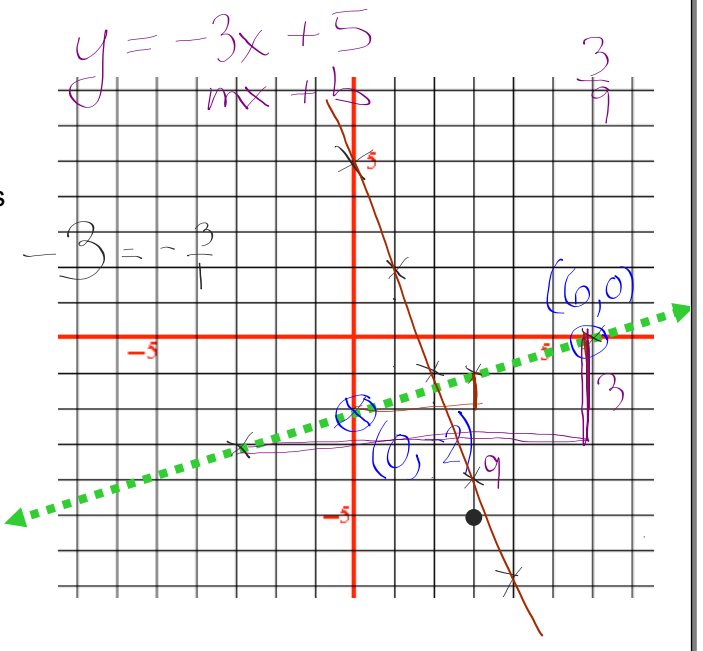
A. See what you remember and graph the linear equation

$y = \frac{1}{3}x - 2$

B. Circle the x- and y-intercepts

C. Draw and label a slope triangle on your line

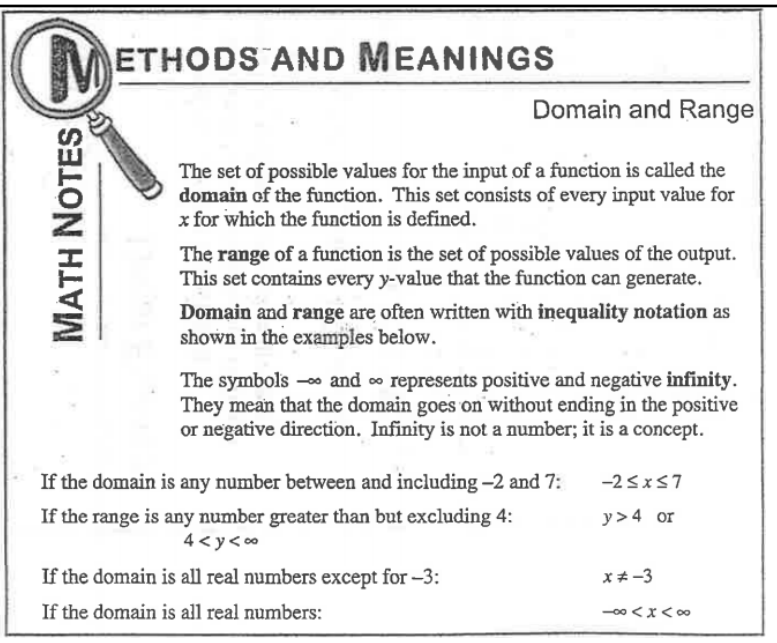
D. Now graph **3x + y = 5** on the same graph



back side

Read the Math notes on

Domain and Range



MATH NOTES

METHODS AND MEANINGS

Domain and Range

The set of possible values for the input of a function is called the **domain** of the function. This set consists of every input value for x for which the function is defined.

The **range** of a function is the set of possible values of the output. This set contains every y-value that the function can generate.

Domain and **range** are often written with **inequality notation** as shown in the examples below.

The symbols $-\infty$ and ∞ represents positive and negative **infinity**. They mean that the domain goes on without ending in the positive or negative direction. Infinity is not a number; it is a concept.

If the domain is any number between and including –2 and 7:	$-2 \le x \le 7$
If the range is any number greater than but excluding 4:	$y > 4$ or $4 < y < \infty$
If the domain is all real numbers except for –3:	$x \ne -3$
If the domain is all real numbers:	$-\infty < x < \infty$

Domain All of the allowable inputs to a function.

$y = 2x + 3$ $y = \sqrt{x}$

Range All of the possible outputs (y-values) of a function.

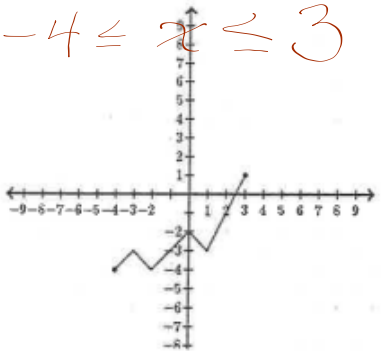
2

Many of the problems on this warm up are review from Algebra but may have been forgotten. Thus, a review!

A

The function $f(x)$ is graphed; what is its domain?

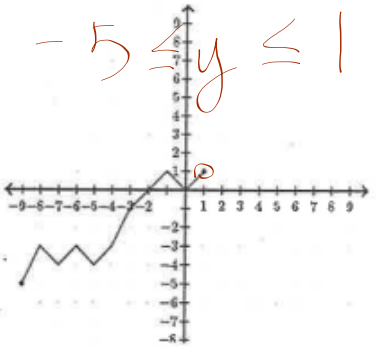
$-4 \leq x \leq 3$



B

The function $f(x)$ is graphed; what is its range?

$-5 \leq y \leq 1$

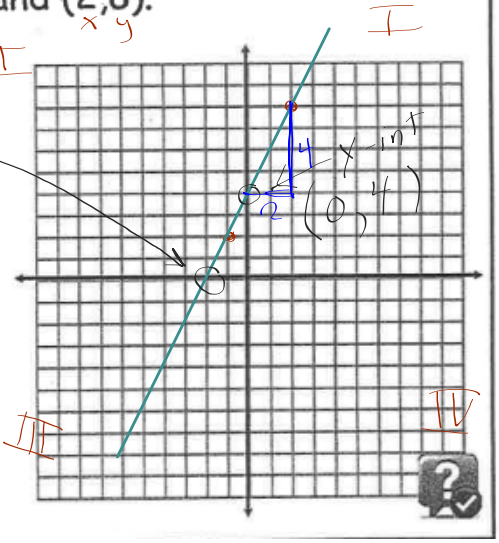


C Graph the line that passes through the points (-1, 2) and (2,8).

x y x y

Identify:

1. x-intercept $(-2, 0)$
2. y-intercept
3. slope $\frac{4}{2} = 2$
4. quadrants through which the line passes I II III



D

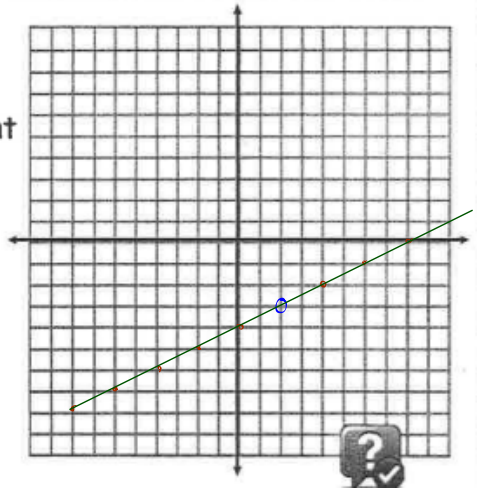
Graph the line passing through the point (2, -3) with a slope of $\frac{1}{2}$. ← ↕ ← ↔

1. Graph the line.

2. Identify another point on the line. (4, -2) (8, 0) (-2, 5)

3. Name the quadrants through which the line passes.

I III IV



One of the objectives today:

Get refamiliarized with function language and notation.

---→

Functions

a handout

Now Read the back side of the green handout

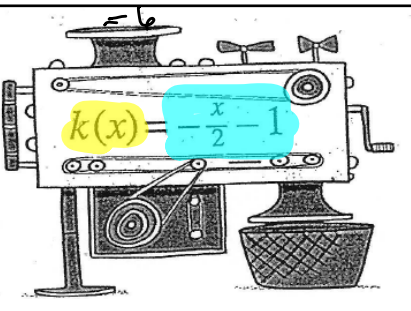
"Function Language and Notation"

a) Calculate $K(-6)$

$x = -6$ is the input

$= -\frac{(-6)}{2} - 1$

$= 3 - 1 = 2$



b) Find x if $k(x) = 10$

$-\frac{x}{2} - 1 = 10$

$+1 \quad +1$

$-\frac{x(2)}{2} = 11(2)$

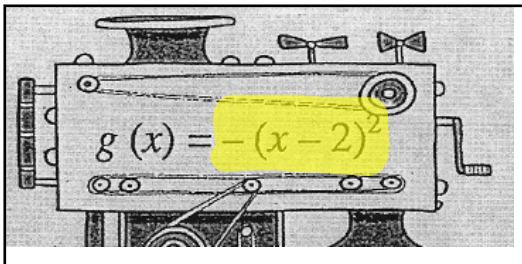
$x = -22$

$x = -22$

$-\frac{x(2)}{2} - 1(2) = 10(2)$

$-x - 2 = 20$

$+2 \quad +2$



(c) Calculate $g(3)$

$-(3-2)^2 = 1^2 = 1$

$-(1)^2 = -1$

(d) Calculate $g(-1)$

$g(-1) = -(-1-2)^2$

$-(-3)^2$

$g(-1) = -9$

$-(-10)^2$

-100

(e) Solve $g(x) = -16$

$-(x-2)^2 = -16$

$\sqrt{(x-2)^2} = \sqrt{16}$

$x-2 = \pm 4$

$x-2 = 4$

$x = 6$

$x-2 = -4$

$+2 \quad +2$

$x = -2$

(f) Solve $g(x) = 100$

$-(x-2)^2 = 100$

$\sqrt{(x-2)^2} = \sqrt{-100}$

Stuck

NO solution

Syllabus.... just the first sheet only today.

The Benefit

- ✓ *Brain training, pure and simple. A part of y*
  class and not just any part. It will be analyti
  of you will need to think in analytic terms at
- ✓ *For many of you, the skills you learn in this*
  other advanced math classes and careers.

What's Required?

- ✓ *It requires giving a significant daily effort b*
- ✓ *My belief: Every single student can learn al*
- ✓ *For many students, it means getting extra he*

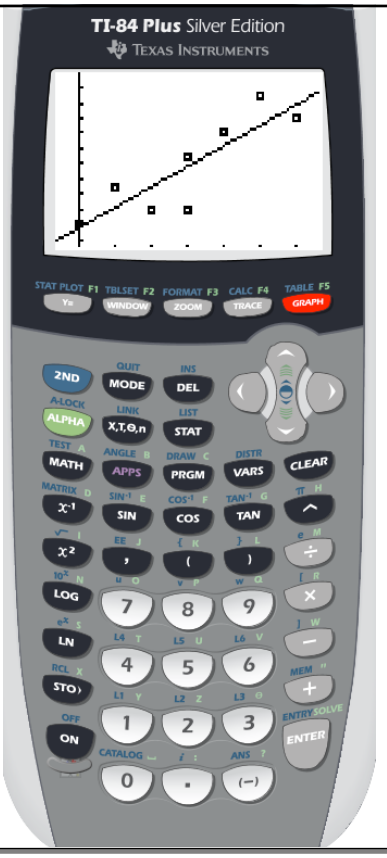
Extra Help:

My room on Mon-Fri mornings, 8:00-8:30 am & some days afterschool.

Links for Textbook Homework help: *http://blogs.4j.lane.edu/cedarlund/adv-alg-information/*

√The Required Materials:

1. Every student must have their own **TI-83 or TI-84 Graphing Calculator** every day in class for use on the assignments. It is important you have yours by Monday of the 2nd week of class. (no cell phones allowed as calculators, at least during class.) *If there is no possible way you can get access to one, then you need to let me know privately and I can try to set you up with a loaner available from the Math Department. (There is limited supply so ask within the first day or two of class).*



2. Notebook/Organization:

The following three items should be kept separately.

1. Keep **Notes** in spiral notebook #1 (includes notes and examples from class). Toward the end of the trimester there will be a notebook check for a grade. Do not put your homework in this notebook. Do not put other handouts in this spiral notebook, just notes.

2. Keep **homework** from the current chapter in spiral notebook #2 or a separate folder, but NOT in notebook #1.

3. **Handouts** (and other Warm Ups that happen to be on hand outs) should be kept in a separate folder or notebook.

3. **Correcting pens of a different color (than your HW). Pencils and erasers.**
4. **Straightedge or ruler for graphs.**
5. **Textbook** (CPM Core Connection Algebra 2)

√ Algebra 2A Content

- Review of *Algebra 1/Geometry* Transfer Skills
- Ch.1 Investigations and Functions
- Ch.2 Transformations of Parent Graphs
- Ch.3 Equivalent Forms of Equations
- Ch.4 Solving and Intersections

Return your syllabus to the front desk

We'll go over more of it tomorrow.

I'm assuming that:

- You'll be getting a TI graphing calculator by ~~next~~ week or that you already have one.
- You can stay organized
- Give a genuine effort both in and out of class.

☆ ☆ Rows	Pods of 3 to 4	**Strong** preference for **rows**
☆ Rows	Pods of 3 to 4	Slight preference for **rows**
Rows	Pods of 3 to 4	I'm flexible
Rows	☆ Pods of 3 to 4	Slight preference for **pods**
Rows	☆ ☆ Pods of 3 to 4	**Strong** preference for **pods**

Assignment #1

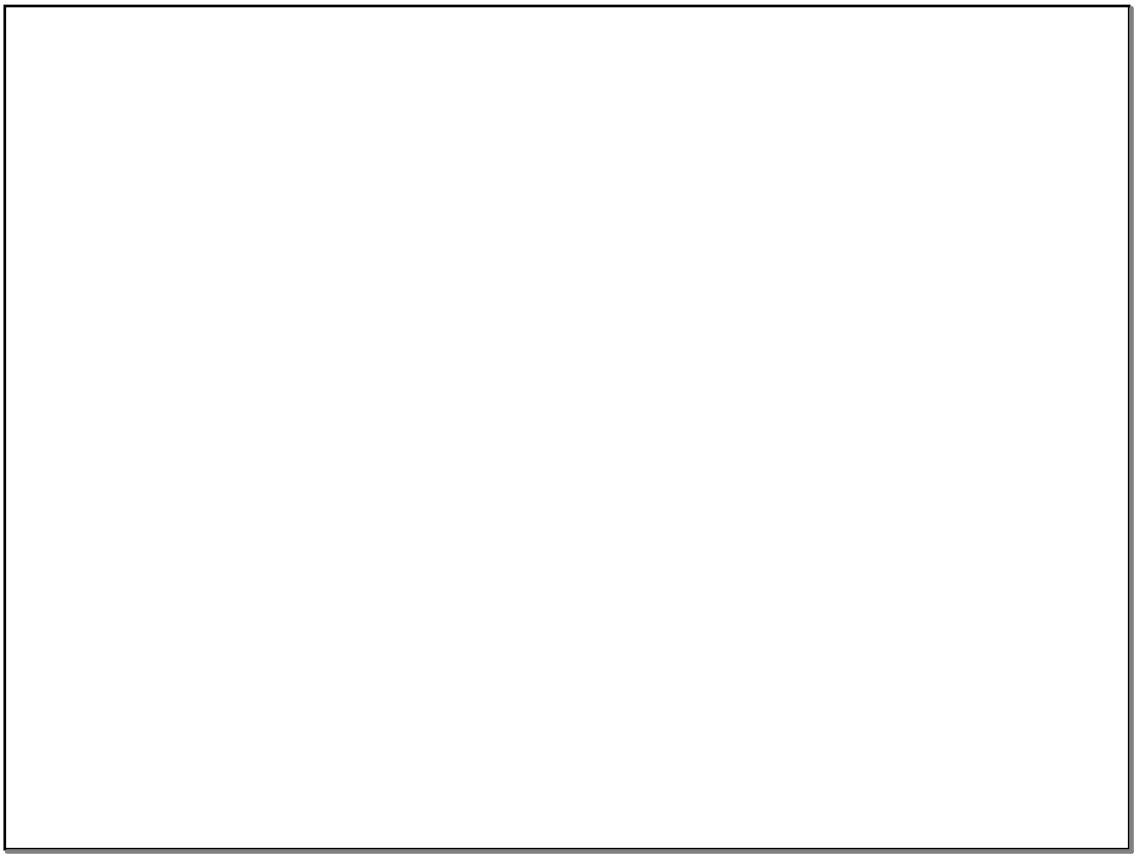
a Work sheet.

You will internet access for #9

remember to get your supplies ASAP

Pre-Learning Check

Non-graded (10 points for your efforts)
Work quickly, move on if you don't understand.
You'll need some type of a calculator.

When finished..... turn it in. You can pick up your text and start the assignment.

Alg 2, Volume 1