1) Turn in you summer homework! (I am returning the ones I collected.)

2) Please get out your book work, foundations ws, and signed syllabus.

3) Picture Day is Thursday/ Friday! Please grab a picture form from the front table.

4) Write your name on the tab of the file folder and popsicle stick.

5) Complete the Warm Up to the right. :)

Use the following polynomial to answer these questions.

A. $f(x) = 3x^4 - 4x^3 + 47x^2 - 2x + 12$

   1. What is the degree of the polynomial? 4

   2. What is the leading term? $3x^4$

   3. How many terms are there? 5

   4. What is the constant? 12

B. Are the following polynomials?

   1. $3x^{1/3} + 2x^2 - 47$ NO

   2. $6x^{-2} - 6x^3 + 12$ NO $\frac{6}{x^2}$

   3. $5x^{47} - 1$ Yes

C. Write the following polynomial in standard form

   1. $7x - 6x^7 + 47x^3 + 12$

$$-6x^7 + 47x^3 + 7x + 12$$

Welcome to Alg 2 Trig!

New Things for A2T:
1. Unit Plans
2. Student Self Evaluation
3. DLT -Daily Learning Target Quizzes
4. Student prepared Study Guides for each unit
5. Homework Policy
6. ACT Instruction
7. TOYO
8. THIS IS A HARD CLASS!!!!

Homework -> even answers

pg. 341
#4.) yes; $f(x)=8x^4+6x-3$; 4th degree; Quartic; L.C.:8
6.) No, exponents are not all whole numbers: -2
8.) No, exponents are not all whole numbers: denom.

pg. 76

38.) nonlinear; -208
46.) domain: $0 \le t \le 5$ 1, 2, 3, 4, 5
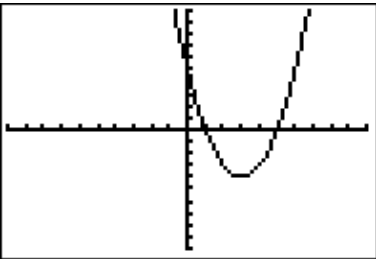   range: $140.7 \le w(t) \le 172$
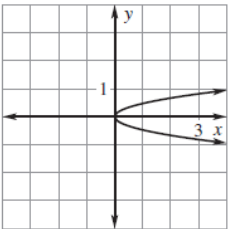   the watermelon acerage ranged from
      147,000 in 2004 to 172,000 in 1999.

Any Questions from Day 1 HW?

*Domain/Range Activities

*Function or Not

Algebra 2 Trig Daily Learning Target Quiz
Polynomials-Functions

1.) Is this a polynomial? Why or why not? a) $f(x)=2x^3-x^{-2}+7$ b) $f(x)=5x^2+6x-8$	2.) $(1,3),(4,7),(3,7)$ a) Is this a function? Why or why not? b) State the domain & range.
3.) a) Is this a function? Why or why not? b) State the domain & range.	4.) Use the VLT to determine whether this relation is a function ? Explain.

ACT DLT EXTRA CREDIT DAY 3

To check the slope of a ramp, a building inspector places an overlay of the standard (x,y) coordinate plane on the construction blueprint so that the x-axis aligns with the horizontal on the blueprint. The line segment representing the side view of the ramp goes through the points (1, -3) and (14, 2). What is the slope of the planned ramp?

A. $-\frac{1}{15}$

B. $-\frac{1}{13}$

C. $-\frac{1}{6}$

D. $\frac{5}{13}$

E. $\frac{13}{5}$

*Need graph paper!

Chapter 2
Linear Functions
(2.2) Slope
(2.3) Graphing
(2.4) Writing Equations

KEY CONCEPT   *For Your Notebook*

Slope of a Line

Words	Algebra	Graph

The **slope** m of a nonvertical line is the ratio of vertical change (the *rise*) to horizontal change (the *run*).

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{\text{rise}}{\text{run}}$$

slope

KEY CONCEPT   *For Your Notebook*

Classification of Lines by Slope

The slope of a line indicates whether the line rises from left to right, falls from left to right, is horizontal, or is vertical.

Positive slope
Rises from
left to right

Negative slope
Falls from
left to right

Zero slope
Horizontal

Undefined slope
Vertical

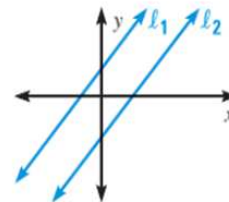## KEY CONCEPT   *For Your Notebook*

Slopes of Parallel and Perpendicular Lines

Consider two different nonvertical lines ℓ_1 and ℓ_2 with slopes m_1 and m_2.

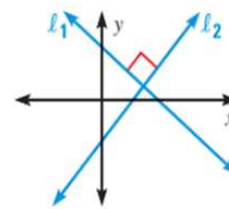**Parallel Lines** The lines are parallel if and only if they have the same slope.

$$m_1 = m_2$$

$3 = 3$

Perpendicular Lines The lines are perpendicular if and only if their slopes are negative reciprocals of each other.

$$m_1 = -\frac{1}{m_2}, \text{ or } m_1 m_2 = -1$$

$3 \rightarrow -\frac{1}{3}$

Slope-Intercept Form

$$y = mx + b$$

Point-Slope Form

y-k=m(x-h)

Standard Form

$$Ax + By = C$$

Positive Whole #

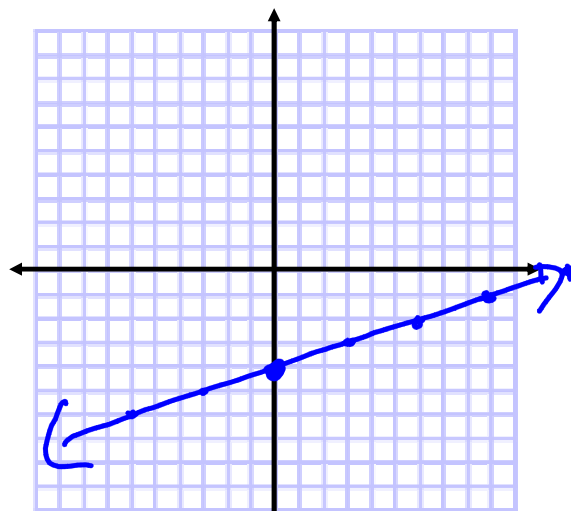$$-2\left(-\frac{1}{2}x + 3y = 6\right)$$

$$1x - 6y = -12$$

II. Graphing

Example: $y=(1/3)x - 4$

$Y = \frac{1}{3}x - 4$

y-int= $(0, -4)$

slope= $\frac{1}{3}$

D: $(-\infty, \infty)$ AR
R: $(-\infty, \infty)$

X-int

$0 = \frac{1}{3}x - 4$

$+4 \qquad +4$

$\frac{3}{1} \cdot 4 = \frac{1}{3}x \cdot \frac{3}{1}$

$12 = x$

$(12, 0)$

II. Graphing
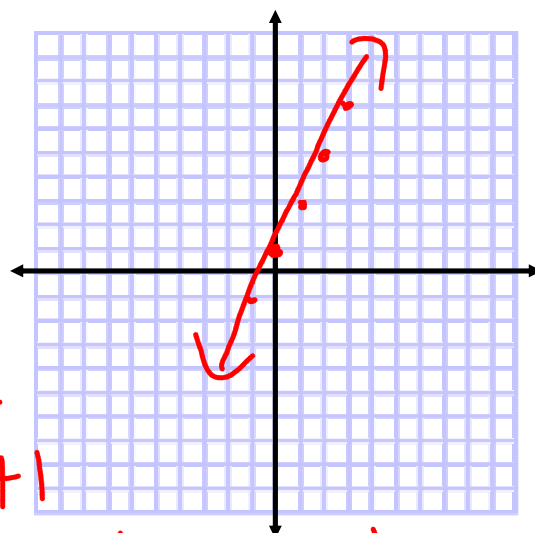
Example:

$$y=2(x-1)+3$$

$$Y=2x-2+3$$

$$Y=2x+1$$

D: $(-\infty, \infty)$

R: $(-\infty, \infty)$

X-int

$0=2x+1$

$X=-\frac{1}{2}$

Y-intercept

$(0,1)$

*Get to know ya

II. Graphing

Example $4x - 6y = 12$

$-4x \qquad\qquad -4x$

$\dfrac{-6y}{-6} = \dfrac{-4x}{-6} + \dfrac{12}{-6}$

x-int	y-int

$y = \dfrac{2}{3}x - 2$

$(3, 0)$ $(0, -2)$

II. Graphing

Example

x=5

underfined

y=-3

0
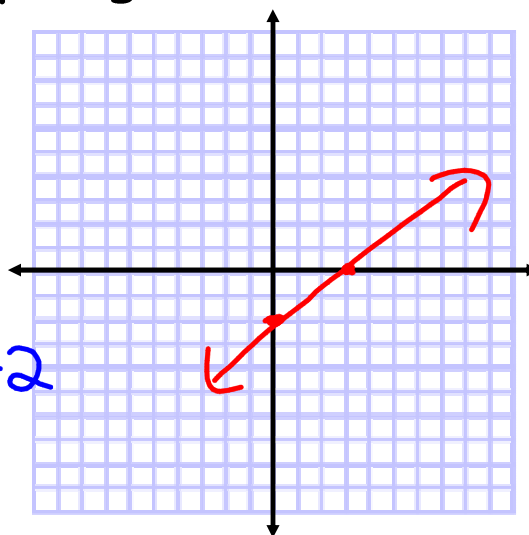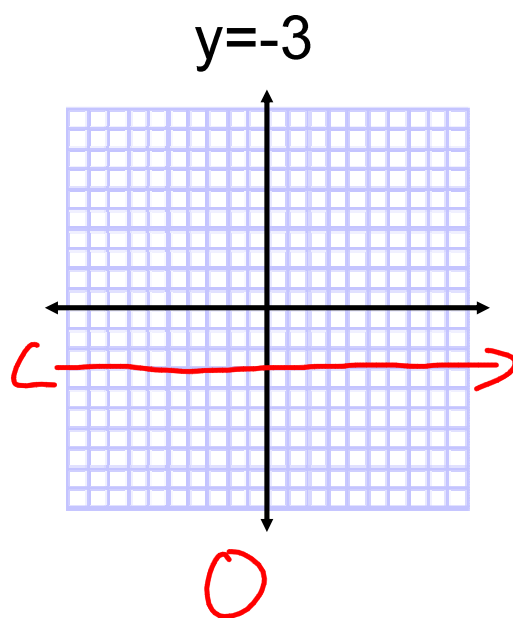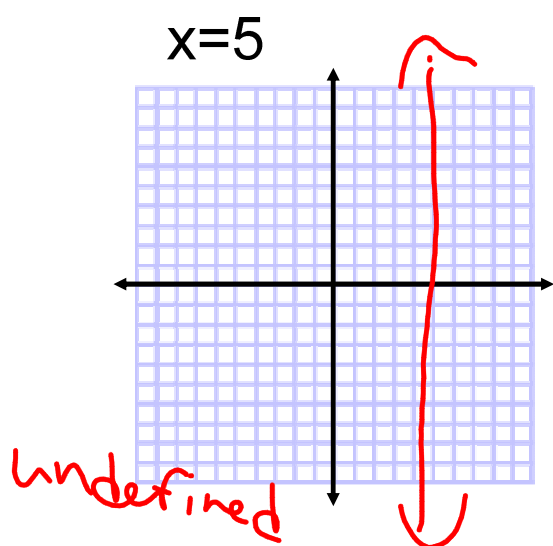
Hands on Activities

-matching graphs, equations, intercepts

(2)

$m =$ slope

$b =$ y-intercepts

III. Writing Equations

Example   Write an equation of a line with slope of 3 and a y-int of -5.

$$Y = 3x - 5$$

III. Writing Equations

Example

Write an equation of a line that is parallel to y=2x + 4
and passes through the point (-1, 5).

$$m = 2$$

$$y - y_1 = m(x - x_1)$$

$$y - 5 = 2(x + 1)$$

$$y - 5 = 2x + 2$$
$$+5 \qquad +5$$

$$y = 2x + 7$$
$$-2x \qquad -2x$$

$$-1(-2x + y = 7)$$

$$2x - 1y = -7$$

Graphing & Writing Equations of Lines WS

Homework:

-See unit plan

-Finish Summer HW or study for Summer HW quiz next week (No homework)

-Picture Day on Thursday or Friday