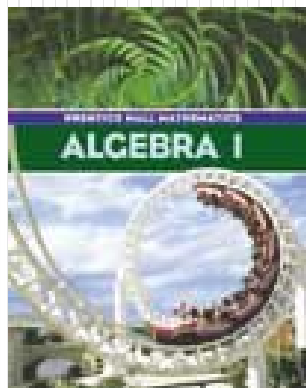
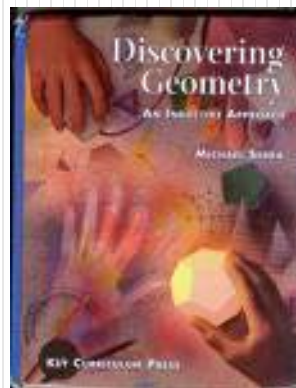


# Mr. Northcutt's Math Classes Class Presentation

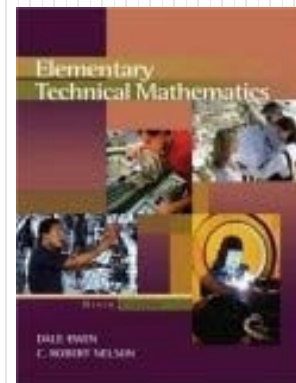
February 24, 2009 (107)



Math 1



Math 2



Applied Math

# Math 1 – Daily Summary



Interesting  
Math Article!

- **Announcements**

- **IBA Today** - Not Here After School!
- **QUIZ: Sections 6.1 thru 6.4 on Friday**

- **Class Objectives – *What you should learn today!***

- Standard Form for the Equation of a Line
  - Finding the **x- and y-intercepts**
  - **Transforming** a Linear Equation (in other form) to Standard Form.
  - Working with Linear Equations with **2 Rates of Change**.

- **Assignment**

- **Section 6-3: 2-46 EVEN, 47, 48**

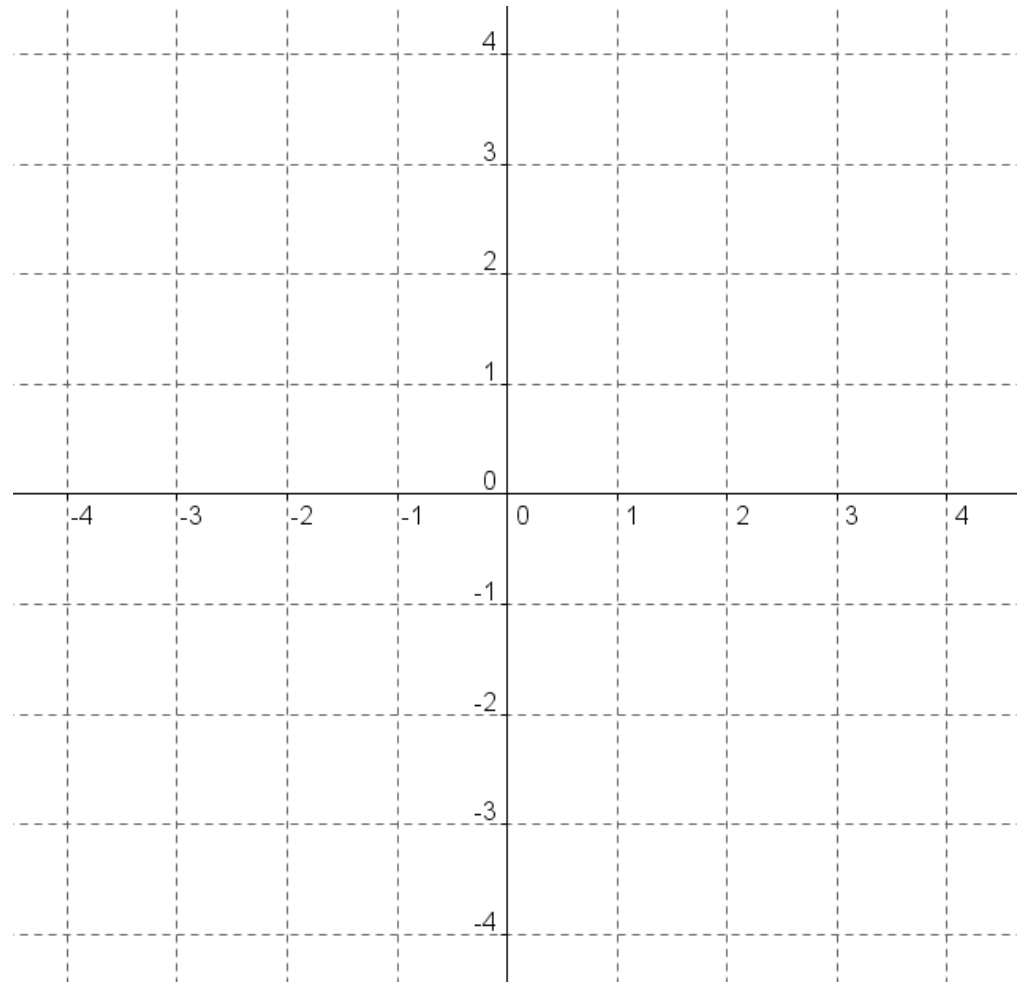
# Slope-Intercept Form $y = mx + b$



- Identify **Slope (m)** and **y-intercept (b)**, then graph.

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

$$2x + 3y = 6$$





# Standard Form

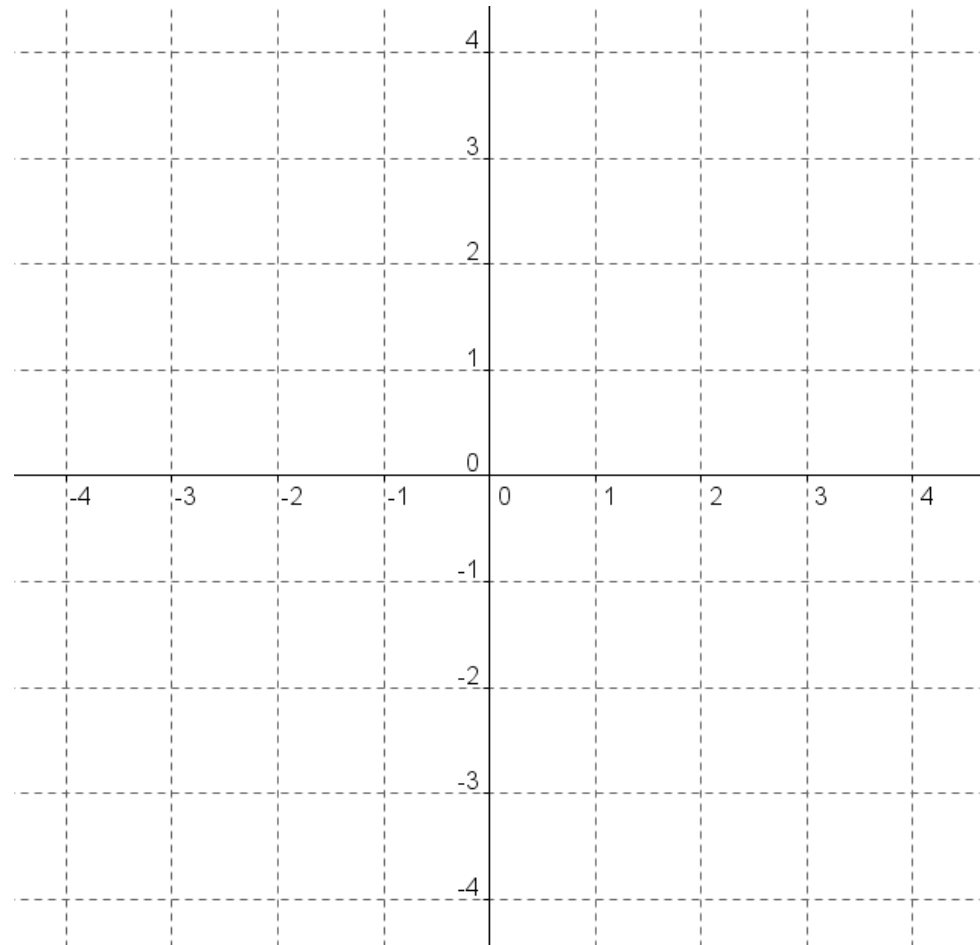
- The **Standard Form** of a Linear Equation is:

$$Ax + By = C$$

- **Examples:**

$$3x + 4y = 8$$

$$2x - 3y = 12$$



## GRAPH USING:

1. Slope-Intercept Approach
2. Intercepts Approach

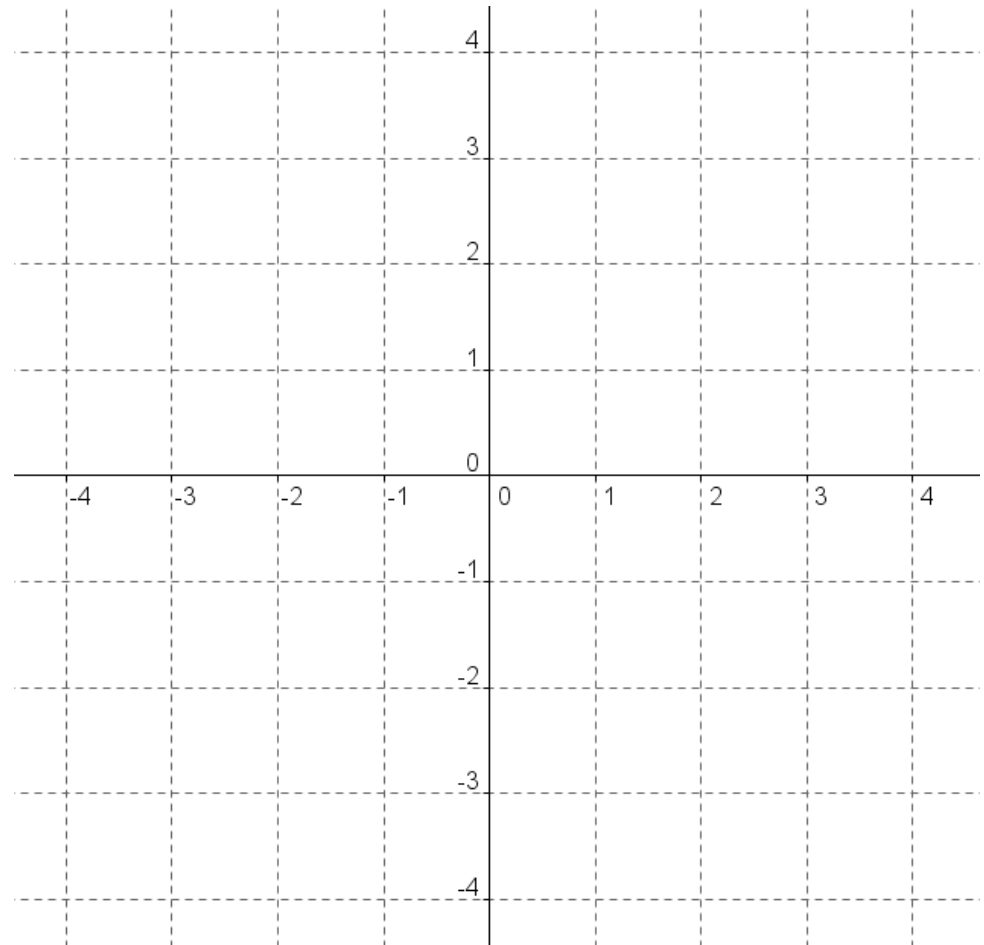


# Horizontal & Vertical Lines

- Graph the following:

$$y = -3$$

$$x = 2$$





# Transforming to Standard Form

- Use Algebra Skills to transform  $Ax + By = C$  to Standard Form:

$$y = -\frac{2}{5}x + 1$$

$$y = \frac{3}{4}x + 1$$

# Multiple Rates of Change (by variable)

- Write an equation in Standard Form for the minutes a person would need to bicycle and swim laps in order to burn 300 calories.

Activity	Calories Burned per Minute
Bicycling	10
Bowling	4
Hiking	7
Running (5.2 mph)	11
Swimming Laps	12
Walking (3.5 mph)	5

- What are the variables?
- What are the rates of change for each variable?
- How are they related?
- What is an equation?
- Is there only one unique solution for the problem?

# Multiple Rates of Change (by variable)

- Larry runs at an average rate of 8 mph. He walks at an average rate of 3 mph. Write an equation to relate the time walking and running to travel 15 miles.

- What are the variables?
- What are the rates of change for each variable?
- How are they related?
- What is an equation?
- Is there only one unique solution for the problem?



# Some Reasons to Use Standard Form



- **There are a couple of good reasons to use Standard Form:**
  1. **Graphing** (and already in Standard Form - find intercepts).
  2. **Intercepts** have important “physical” meaning.
  3. **Rates of Change** of two variables are given.

# Math 2 – Daily Summary



Interesting  
Math Article!

- **Announcements**

- **IBA Today** - Not Here After School!
- **QUIZ: Lessons 10.1 thru 10.6 on Friday**

- **Class Objectives – *What you should learn today!***

- Ability to Multiply & Simplify Square Roots
- Understand & Apply Properties of (30°-60°) Right Triangle

- **Assignment**

- **Lesson 10.4: 22-27, 29-31, 39**



# Working with Square Root

- A better way to explain...*maybe!* Find perfect squares.

4  
9  
16  
25  
36  
49  
64  
81  
100  
121  
144

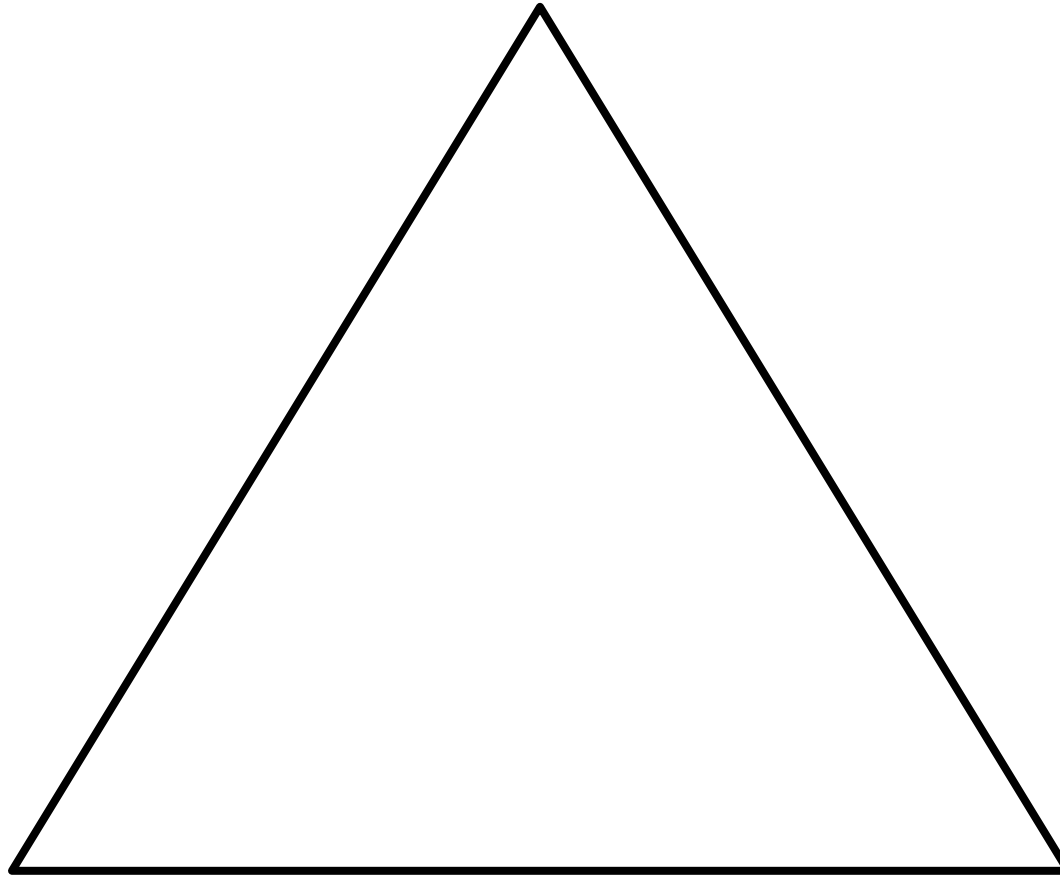
$$\sqrt{120}$$

$$\sqrt{784}$$

# 30-60 Right Triangle



- **Consider Equilateral Triangle**

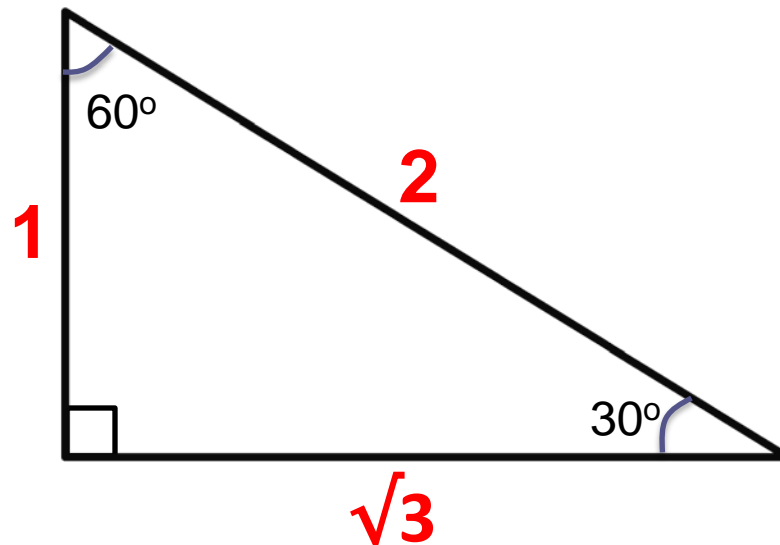




# 30-60 Right Triangle Conjecture

- **30-60 Right Triangle Conjecture**

- Given an 30-60 right triangle, if the shorter leg has length  $x$ , then the longer leg has length  $x\sqrt{3}$  and the hypotenuse has length  $2x$ .



# Applied Math – Daily Summary



Interesting  
Math Article!

- **Announcements**

- **IBA Today** - Not Here After School!
- **QUIZ: Sections 13.1 thru 13.3 on Friday**

- **Class Objectives – *What you should learn today!***

- Using Calculator to determine trigonometric functions and their inverses.

- **Assignment**

- **Exercises 13.1: 49-73 ODD**

# Trigonometric Ratios (Right Triangles)



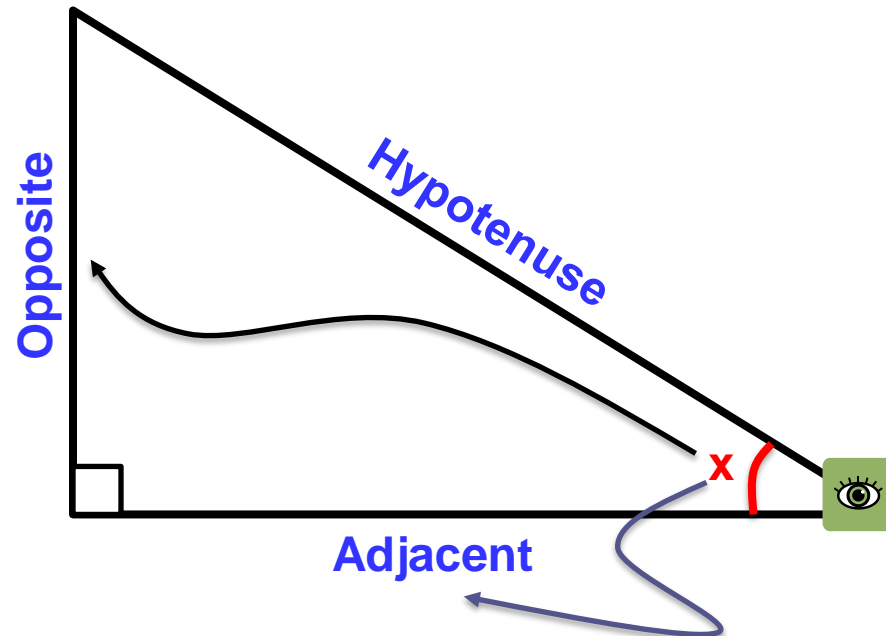
- Sine, Cosine & Tangent of an angle.

$$\sin \angle x = \frac{\textit{Opposite}}{\textit{Hypotenuse}}$$

$$\cos \angle x = \frac{\textit{Adjacent}}{\textit{Hypotenuse}}$$

$$\tan \angle x = \frac{\textit{Opposite}}{\textit{Adjacent}}$$

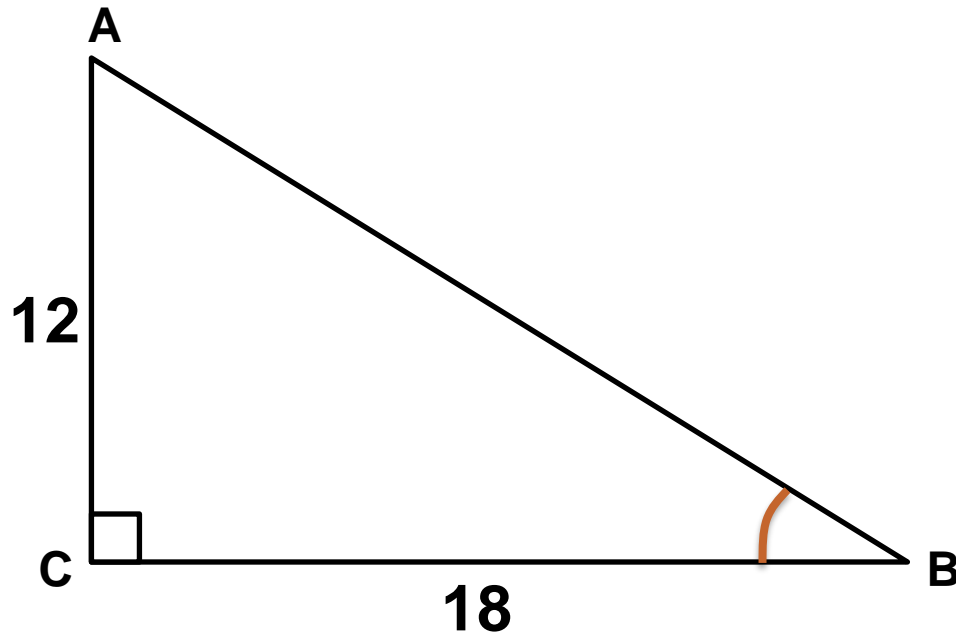
S  
O  
H  
-  
C  
A  
H  
-  
T  
O  
A





# Going the Other Way...

- Can you find angle measure given two side lengths?



$$\angle B = ?$$



# Solve for the Following (Check MODE)

## Trigonometric Functions

$$\sin(49.6^\circ)$$

$$\cos(84.83^\circ)$$

$$\tan(81.85^\circ)$$

## Inverse Trigonometric Functions

$$\sin A = 0.7941$$

$$\cos A = 0.3666$$

$$\tan A = 2.500$$