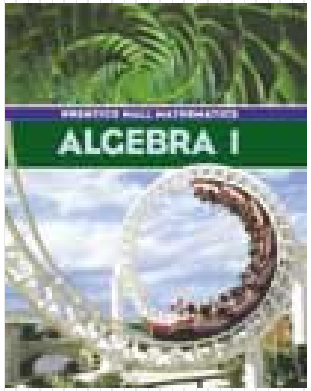
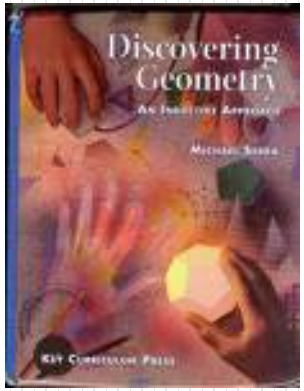
Mr. Northcutt's Math Classes
Class Presentation

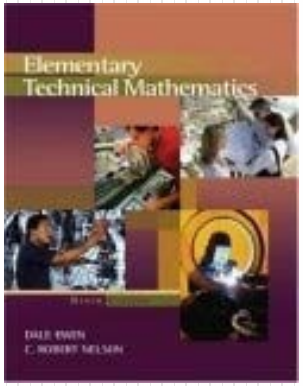
January 7, 2009 (77)



Math 1



Math 2



Applied Math

Math 1 – Daily Summary

- **Announcements**
  - Quiz on Sections 9-1 thru 9-4 on **MONDAY**
- **Class Objectives – What Should You Learn?**
  - Multiplying Polynomials
- **Assignment**
  - **Section 9-3**: 2-40 EVEN

Get a Whiteboard!

Review – Add/Subtract Polynomials

- **Perform indicated operation (+/-).**

$$(2x^2 - 3x + 4) + (3x^2 - 2)$$

$$(x^3 + 3x^2 + 4) - (3x^2 - 2)$$

Refresher – Monomial Multiplication

- **Perform the multiplication.**

$4b(b^2 - 2b + 3)$

$2x^2(x^2 - 3x + 2)$

Refresher – Monomial Factoring

- **Factor any common factors from polynomials.**

$6bc^2 + 3b^2c - 9bc$

$8x^3 - 12x^2 - 4x - 4$

Multiplying Polynomials

- **Works a lot like regular old numbers…**

$$\begin{array}{r} 34 \\ \times\ 22 \\ \hline \end{array}$$

$$(2x+3)\cdot(x+4)$$

$$\begin{array}{r} (2x+3) \\ \times\ \ (x+4) \\ \hline 8x+12 \\ +\ \ 2x^2+3x \\ \hline 2x^2+11x+12 \end{array}$$

Multiplying Binomials

- **This is just the distributive property at work again…**

$$(2x+3)\cdot(x+4)$$

FOIL

First, Outside, Inside, Last

$$2x^2+8x+3x+12$$

$$2x^2+11x+12$$

$$(2x+3)\cdot(x+4)$$

$$\begin{array}{r} (2x+3) \\ \times\quad (x+4) \\ \hline 8x+12 \\ 2x^2+3x \\ \hline 2x^2+11x+12 \end{array}$$

$$2x^2+11x+12 = 2x^2+11x+12$$

Practice

- **Multiply the following <u>binomials</u>…choose a method.**

$(r+6)(r-4)$ $(2x-1)(x+2)$

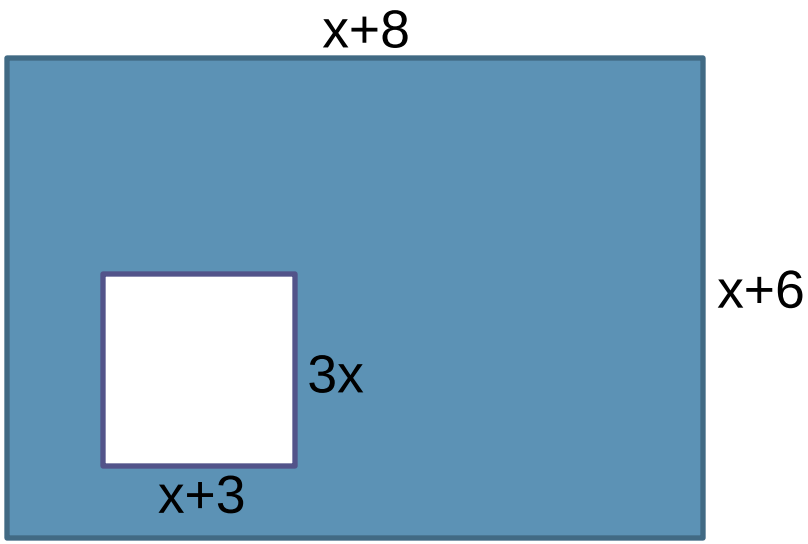
A Little More Challenging

- **How might you multiply the following…**

$$(a-4)(a^2-2a+1) \qquad (y^2-y-1)(9y^2+2)$$

Applications

- **Find the area of the <u>shaded region</u>.**



What About This One?

$$(x+1)^2$$

Apply the definition of a Power (Exponents)

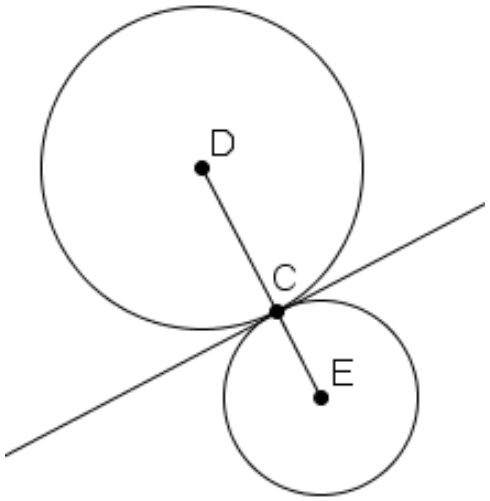
Math 2 – Daily Summary

- **Announcements**
  - Quiz on Lessons 7.1-3 on Friday
- **Class Objectives – *What Should You Learn?***
  - Tangent Circles – Internally and Externally Tangent
  - Properties of Tangents
- **Assignment**
  - **Lesson 7.3**: 1-6, 18, 20-21

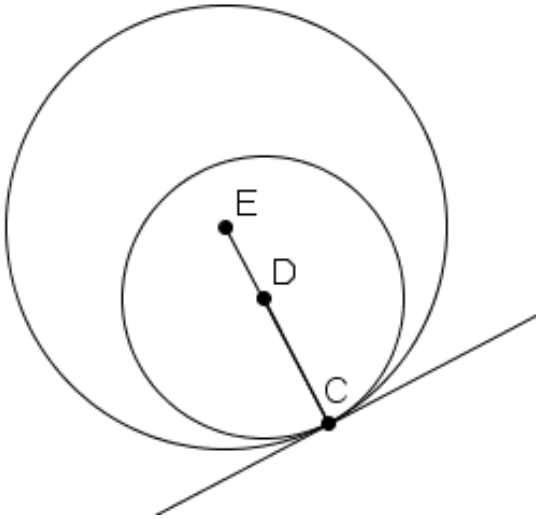
Get a Protractor Ruler, & Compass!

Tangent Circles

- **Tangent Circles**
  - Two circles that are tangent to the same line at the same point (the same point of tangency).



EXTERNALLY Tangent Circles



INTERNALLY Tangent Circles

Investigation – Tangent

In your NOTEBOOK!

1. **Construct a large circle with Center P.**
2. **Draw a line that appears to touch Circle P at exactly one (1) point (a tangent line). Label the Point of Tangency T.**
3. **Construct the segment PT.**
4. **Use a protractor to measure the angles at the Point of Tangency T.**

What conjecture(s) can you make?

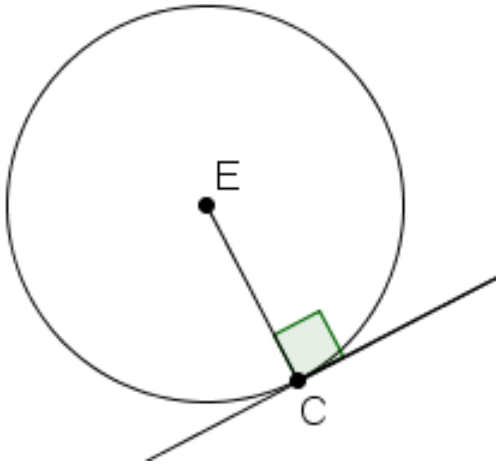
Investigation – Tangent Segments

1. **Construct a large circle with Center S.**
2. **Construct a point outside the circle and label it T.**
3. **Draw two lines through point T that are tangent to the circle S. Mark the Points of Tangency for the two lines and label them A and B.**
4. **Use your ruler to measure the lengths of the two segments TA and TB.**

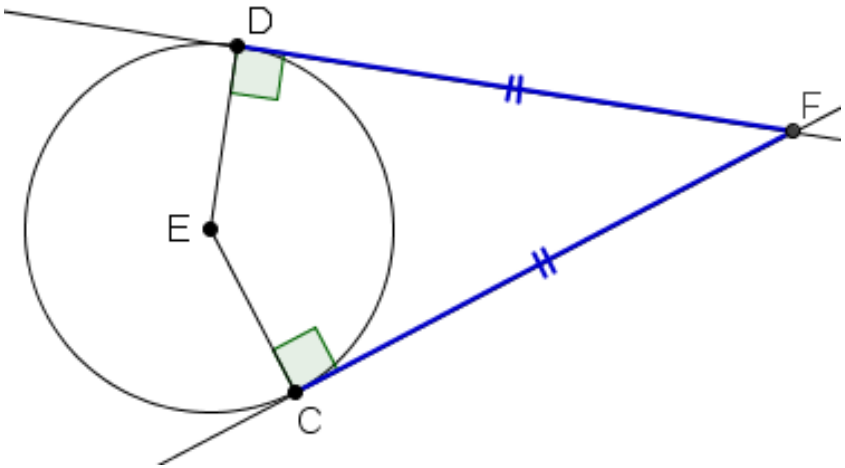
What conjecture(s) can you make?

Tangent Properties – Formal

- **Tangency Conjecture**
  - A tangent to a circle is perpendicular to the radius drawn to the point of tangency.



- **Tangent Segments Conjecture**
  - Tangent segments to a circle from a point outside the circle are congruent.

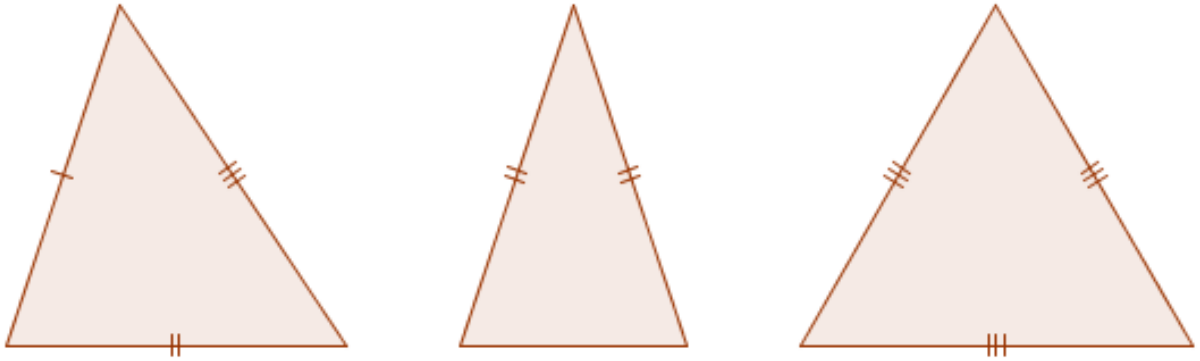


Applied Math – Daily Summary

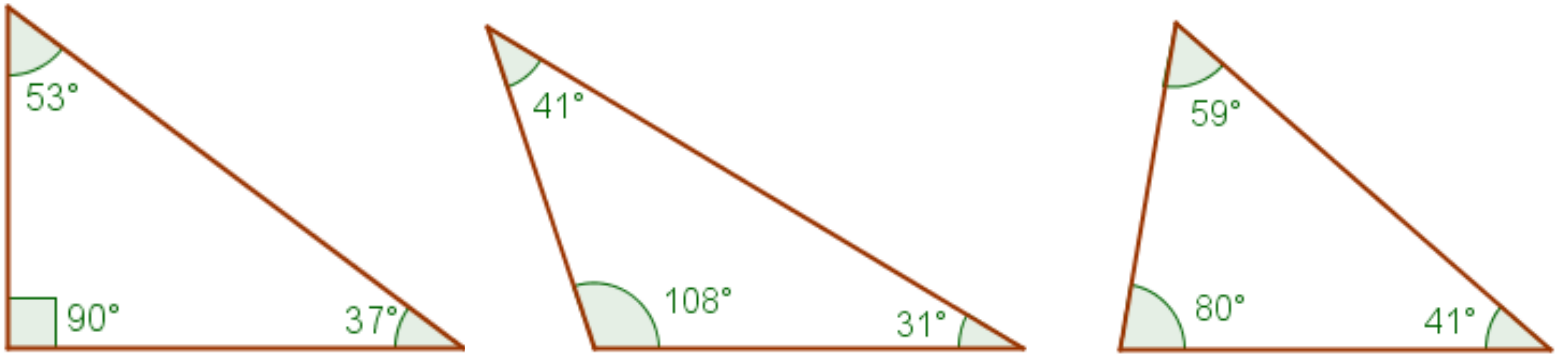
- **Announcements**
  - Quiz on Sections 12.1 thru 12.4 on Friday
- **Class Objectives – *What Should You Learn?***
  - Properties of Triangles
    - Classifying Triangles
      - by Side Length
      - by Interior Angle Measure
    - Using the Pythagorean Theorem
    - Calculating the Area of a Triangle
    - Sum of Interior Angles of a Triangle
- **Assignment**
  - **Section 12.3**: 8, 10 ,12, 18, 30, 32, 38, 44, 46, 48, 50

Classifying Triangles

- **By Side Length**

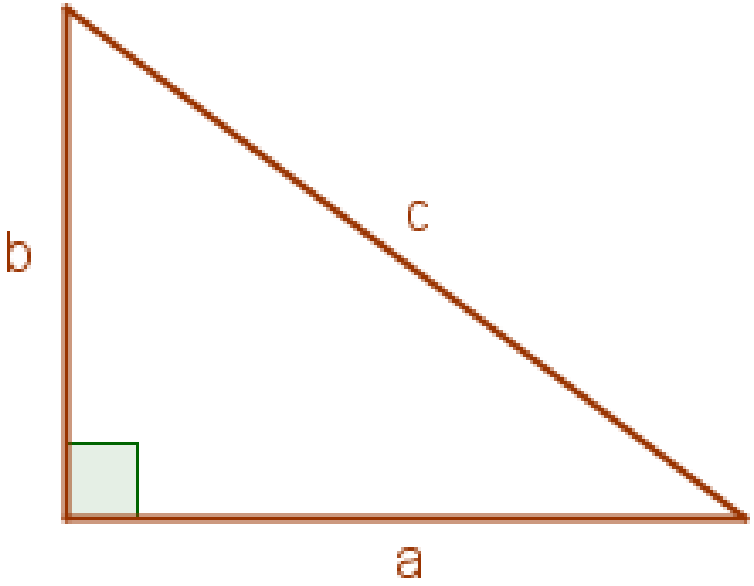


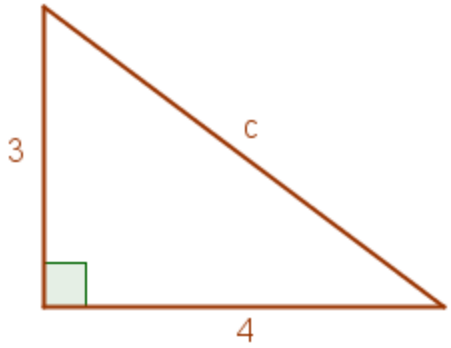
- **By Angle Measures**

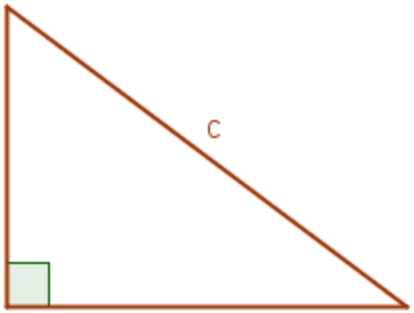


Pythagorean Theorem

- **For <u>RIGHT TRIANGLES</u>…**



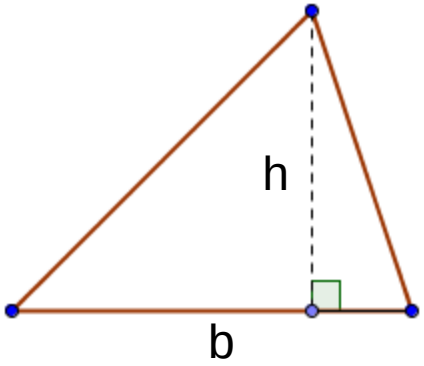


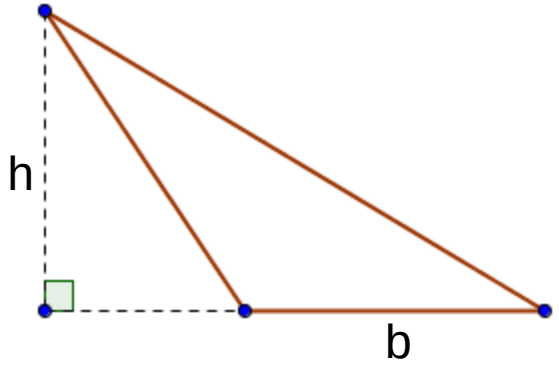


Area of Triangle

- **Given b (base length) and h (corresponding ALTITUDE length):**

$$A = \frac{1}{2}bh$$

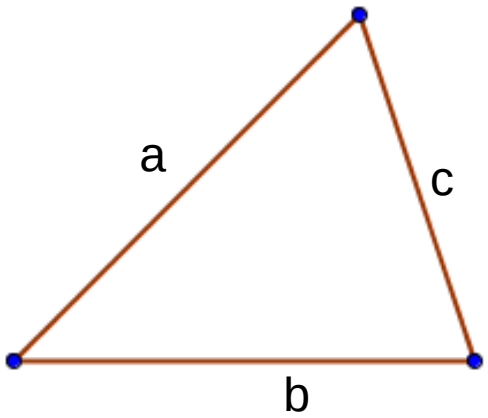




- **If only lengths of three sides are known (Heron's Formula):**

$$A = \sqrt{s(s-a)(s-b)(s-c)}$$

$$s = \frac{1}{2}(a+b+c)$$



Triangle Interior Angles

- **The sum of the measures of the interior angles of ANY TRIANGLE is 180°.**