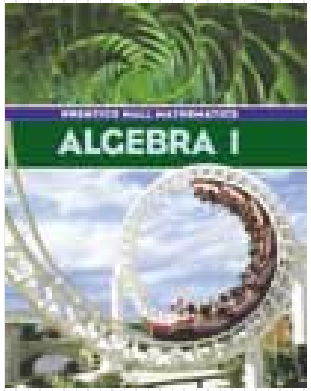
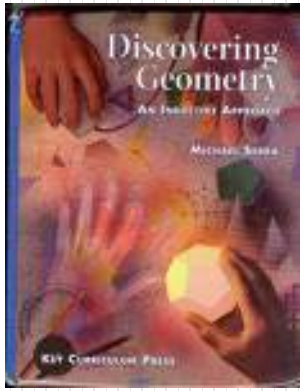
Mr. Northcutt's Math Classes
Class Presentation

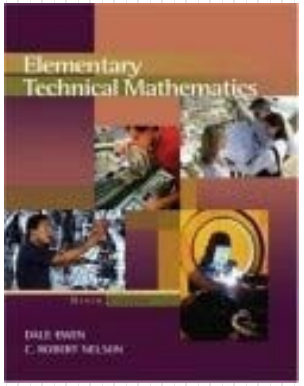
January 8, 2009 (78)



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?***
  - More Practice Multiplying Polynomials
    - Square a Binomial
    - Difference of Squares
- **Assignment**
  - **Section 9-4**: 1-8, 15-20, 28-38 EVEN, 44-52 EVEN

Refresher – Factoring Polynomials

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

$14b^2c^2 + 7bc - 21bc^2$

$8x^3 - 6x^2 - 4x$

Refresher – Multiplying Polynomials

- **Multiply the following <u>binomials</u>.**

$(r+2)(r+2)$

$(2x-1)(2x+1)$

Refresher – Multiplying Polynomials

- **Multiply the following polynomials…**

$(a-3)(a^2-2a+1)$ $(y^2-y-1)(3y^2+2)$

Special Binomials

$$(x+1)^2$$

$$(x-1)^2$$

$$(x+3)(x-3)$$

$$(a+b)(a-b)$$

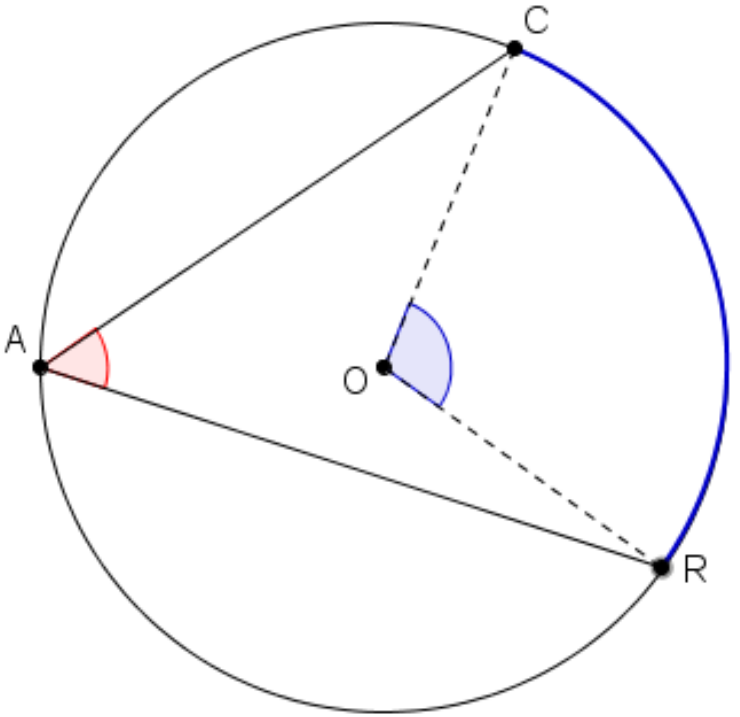
Math 2 – Daily Summary

Compass & Protractor

- **Announcements**
  - Quiz on Lessons 7.1-3 **Tomorrow!**
- **Class Objectives – *What Should You Learn?***
  - More About Arcs and Angles
    - Understand relationship b/w an inscribed angle and its intercepted arc (**Inscribed Angle Conjecture**)
    - Understand PROOF of the Inscribed Angle Conjecture
    - Use Inscribed Angle Conjecture to PROVE other conjectures about intercepted arcs (semicircles, inscribed quadrilaterals and arcs intercepted by parallel lines)
- **Assignment**
  - **Lesson 7.4**: 1-17

Investigation – Inscribed Angle

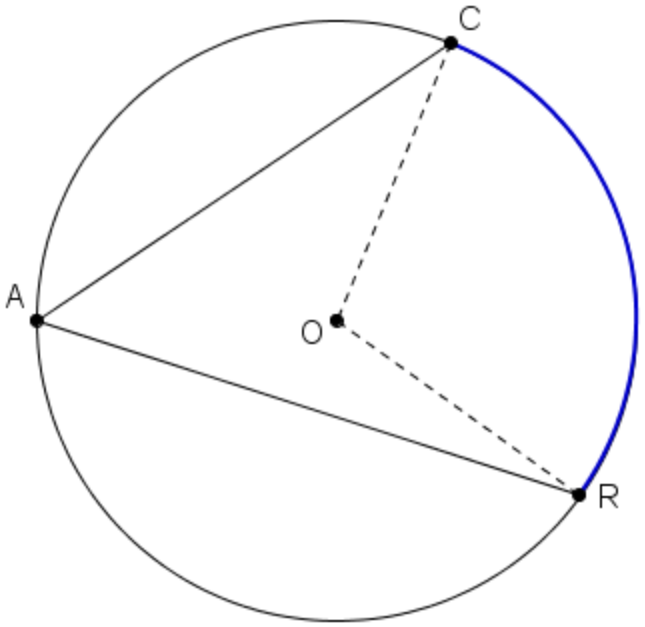
- **Complete the following investigation…**
  1. Draw a circle with center O.
  2. Draw the inscribed angle CAR in the circle O.
  3. Measure angle A in the inscribed angle.
  4. Measure arc CR (the central angle O).



Is there a relationship between the measure of the inscribed angle A and the measure of the intercepted arc CR?

Proof – Inscribed Angle Conjecture

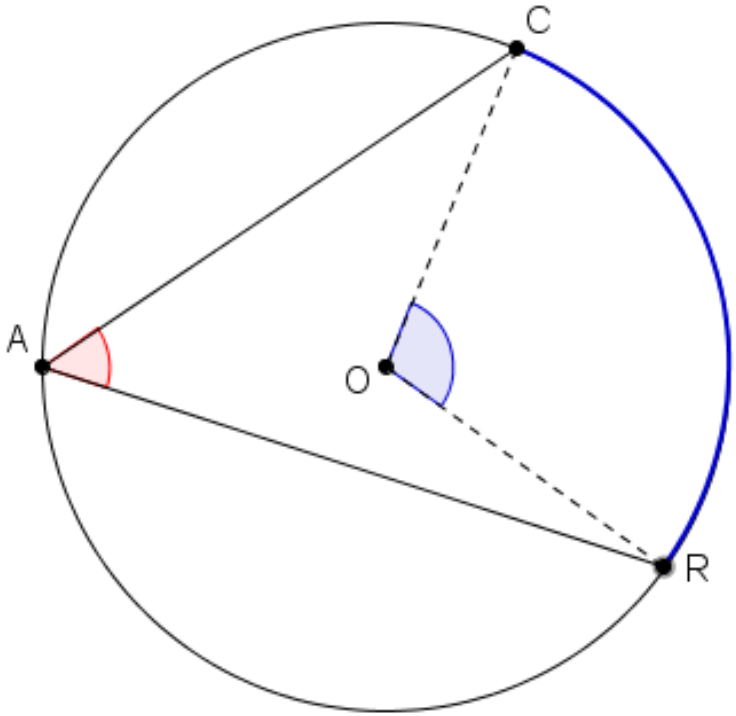
- **One approach…**
  1. Draw segment CR.
  2. Draw radius AO.
  3. Examine the 3 triangles within the larger triangle…*what is special about them*?
  4. What has to be true about all of the angles in triangle CAR?
  5. What has to be true about the angles in triangle COR?
  6. Now use a little of your algebra skills…



Inscribed Angle Conjecture

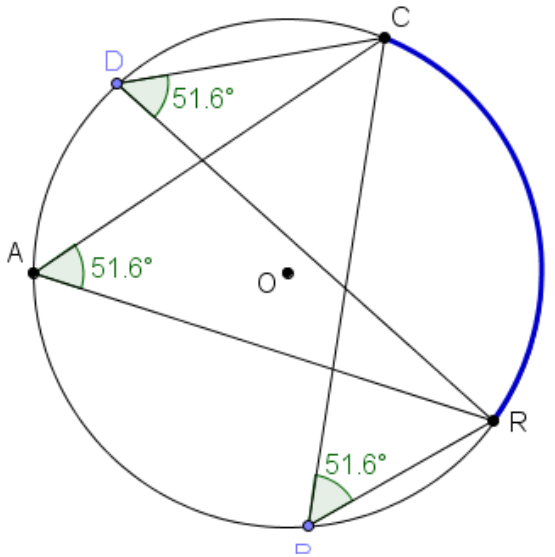
- **Inscribed Angle Conjecture**
  - The measure of an inscribed angle in a circle is half (1/2) the measure of its intercepted arc.

$$m\angle A = \frac{1}{2} m\overset{\frown}{ABC}$$

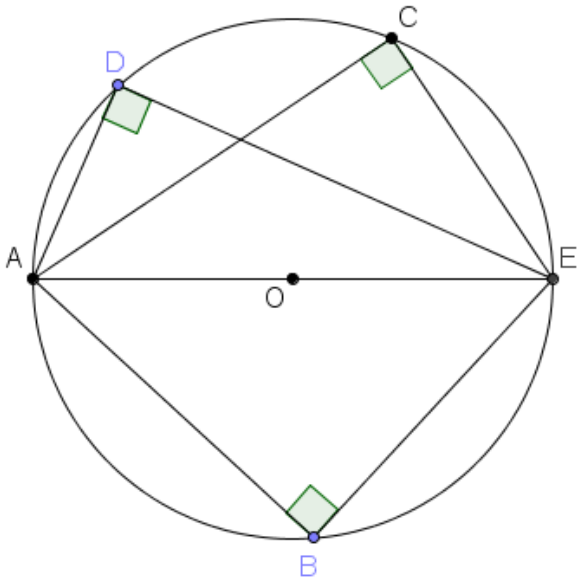


Conjectures that Follow Easily…

- **Inscribed Angles that Intercept the Same Arc**
  - Inscribed Angles that intercept the same arc are congruent.



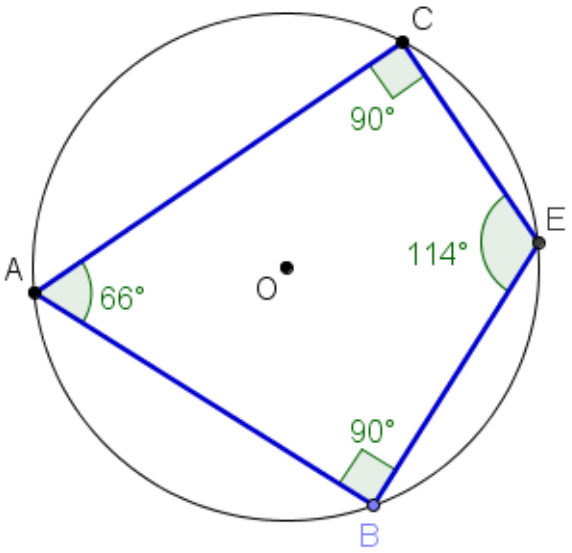
- **Inscribed Angles in a Semicircle**
  - Angles inscribed in a semicircle are 90^{o} (right angles)



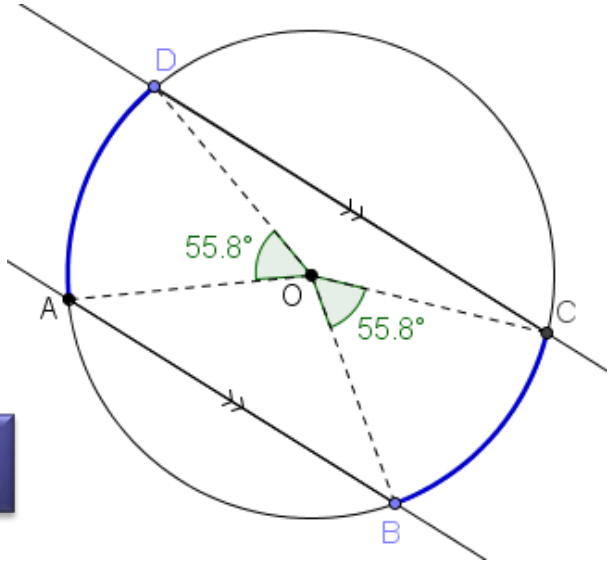
Why are these true? Can you prove it?

Conjectures that Follow Easily…

- **Inscribed Quadrilateral**
  - The opposite angles of a quadrilateral inscribed in a circle are supplementary.



- **Parallel Lines**
  - Parallel lines intercept congruent arcs in a circle.



Why are these true? Can you prove it?

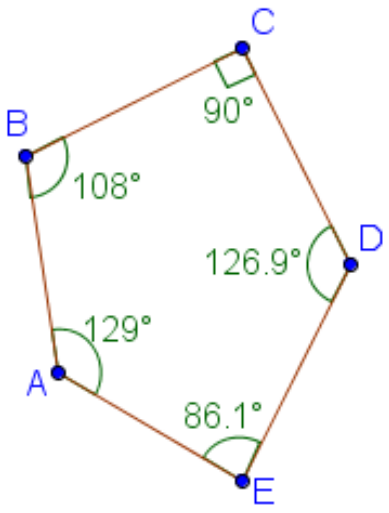
Applied Math – Daily Summary

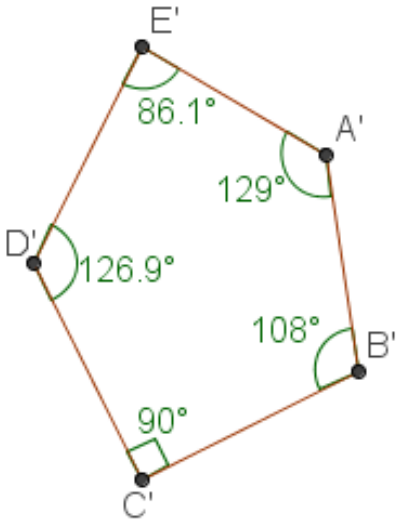
- **Announcements**
  - Quiz on Sections 12.1 thru 12.4 **Tomorrow**
- **Class Objectives – *What Should You Learn?***
  - Similar Polygons
    - Definition of Similar Polygons
    - Using Proportions with Similar Polygons
- **Assignment**
  - **Section 12.4**: 2-20 EVEN

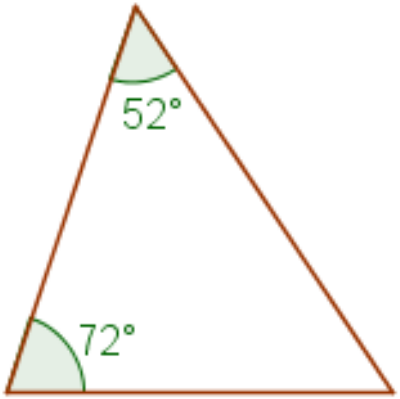
Definition of Similar Polygons

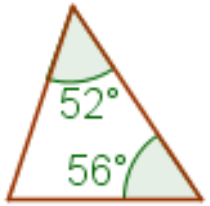
- **Polygons with the "same shape" are called <u>similar</u>.**
- **Polygons are similar when:**

Corresponding Angles are Equal.



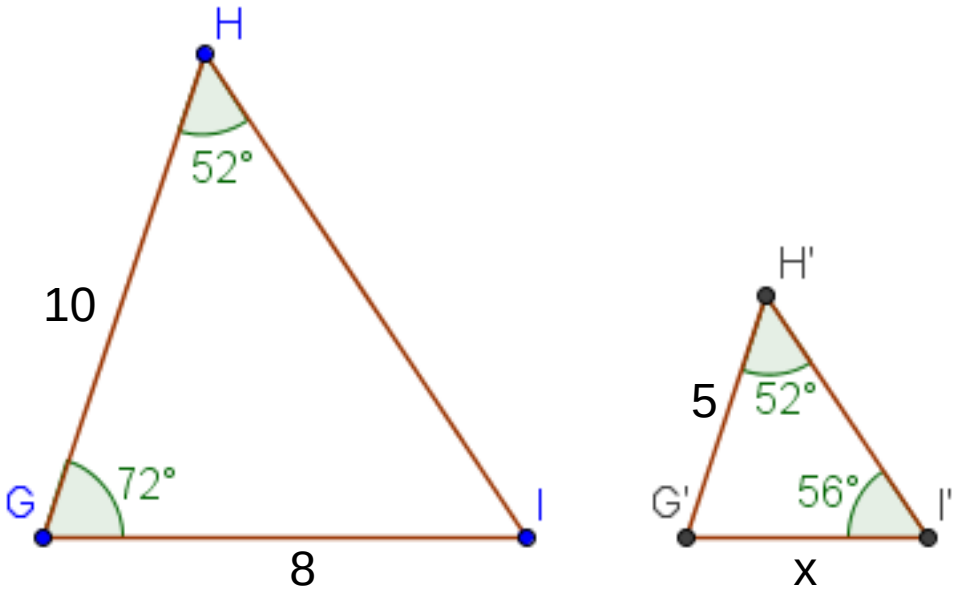






So What?

- **If two polygons are similar, then <u>Corresponding Sides are Proportional</u>.**



$$\frac{HG}{H'G'} = \frac{GI}{G'I'} = \frac{HI}{H'I'}$$

$$\frac{10}{5} = \frac{8}{x}$$

Cross Multiply

$$10x = 40$$

$$x = 4$$

Example 2

- **Find BC and AB.**

Are these triangles similar? Why?