

Date:

Title:

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(A) Lesson Objectives:

a. Review:

- i. Review the **MAIN IDEA** that trigonometry involves the **RELATIONSHIP** between the sides of a right triangle and the acute angles within the same right triangle
  - ii. Review how to determine the three primary trigonometric ratios of a given angle
  - iii. Review how to use a calculator to determine the trig ratios of an angle
  - iv. Review how to use a calculator to determine the angle from a given trig ratio
- b. Solve for an unknown side in a right triangle
- c. Solve for an unknown angle in a right triangle

(B) Review:

See link to

<http://www.kutasoftware.com/FreeWorksheets/Alg1Worksheets/Finding%20Trigonometric%20Ratios.pdf>

(C) Investigation: Applying Trig: Constructing angles

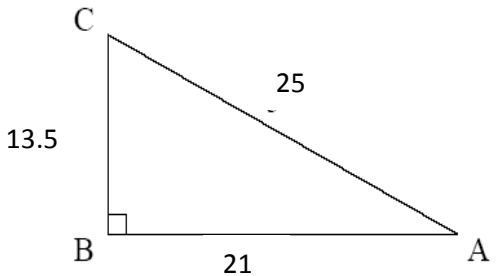
- a. You will be working with 3 straws in order to make the sides of a right triangle.
- b. You may cut the straws to any length that you decide is necessary.
- c. I will give you an angle to construct within a right triangle
- d. You must determine HOW you can use your knowledge of trig in order to “construct” the angle within a right triangle.
  - i. EXAMPLE 1 → construct for me an angle of  $30^\circ$ .
  - ii. EXAMPLE 2 → construct for me an angle of  $41^\circ$
  - iii. EXAMPLE 3 → construct for me an angle of  $55^\circ$
  - iv. EXAMPLE 4 → construct for me an angle of  $37^\circ$ .
  - v. EXAMPLE 5 → construct for me an angle of  $80^\circ$
  - vi. EXAMPLE 6 → construct for me an angle of  $70.5^\circ$
- e. EXPLAIN, in writing, the process you used to make the angles required.
- f. COMPARE and CONTRAST your “triangles & angles” with another group.

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(D) **The Three Trigonometric Ratios: REVIEW**

a. In a Right Triangle:

tangent ratio of an angle = $\frac{\text{leg opposite of the angle}}{\text{leg adjacent to the angle}}$		tan A =
sine ratio of an angle = $\frac{\text{leg opposite of the angle}}{\text{hypotenuse}}$		tan C =
cosine ratio of an angle = $\frac{\text{leg adjacent to the angle}}{\text{hypotenuse}}$		sin A =
		sin C =
		cos A =
		cos C =

**A Helpful Mnemonic For Remembering the Ratios: SOH-CAH-TOA**

Sine is Opposite over Hypotenuse – Cosine is Adjacent over Hypotenuse – Tangent is Opposite over Adjacent

(E) **In Class Examples: Solving for Angles in Right Triangles**

We will use examples from

<http://www.kutasoftware.com/FreeWorksheets/Alg1Worksheets/Trigonometry%20to%20Find%20Angle%20Measures.pdf>

(F) **In Class Examples: Solving for Sides in Right Triangles**

We will use examples from

<http://www.kutasoftware.com/FreeWorksheets/Alg1Worksheets/Trigonometry%20To%20Find%20Lengths.pdf>

(G) **Homework/Resources**

- **HW:** → Complete in class worksheets
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- Video help from OnlineMathLearning with trig ratios:
  - o <http://www.onlinemathlearning.com/trigonometry-side.html> → finding the length of an unknown side
  - o <http://www.onlinemathlearning.com/inverse-trigonometric.html> → find the measure of an unknown angle
- 
- Reading from PurpleMath
  - o <http://www.purplemath.com/modules/basirati.htm>