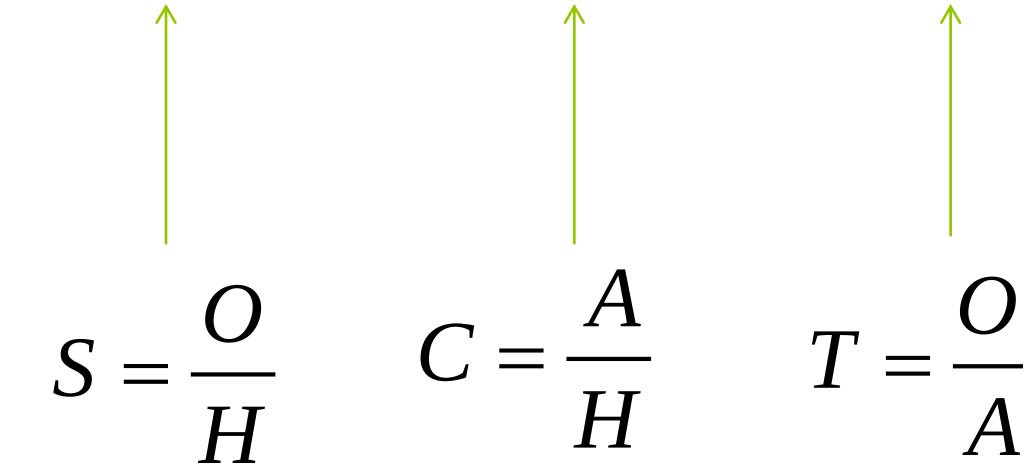
Trigonometry
Part 2

Calculating Trig Ratios

- Use your calculator to calculate the ratio for the given angle measure. Round to FOUR decimal places.
  - Sin 32° = 0.5299
  - Cos 62° = 0.4695
  - Tan 48° = 1.1106

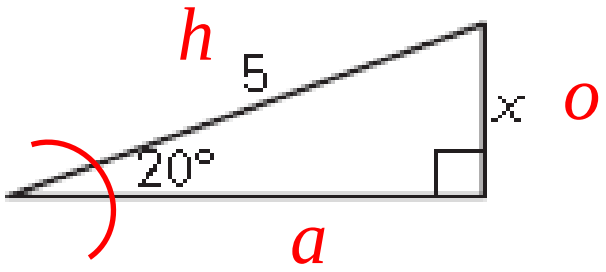
SOHCAHTOA!!!



$$S = \frac{O}{H} \qquad C = \frac{A}{H} \qquad T = \frac{O}{A}$$

- Use a proportion to find the value of the variable. Start by labeling your triangle.

1.



$$\sin = \frac{o}{h}$$

$$\sin 20 = \frac{x}{5}$$

- Since you have "x" and "5" you are working with "o" and "h" which is sine.

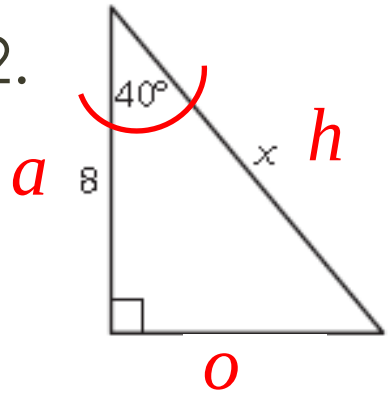
$$\frac{\sin 20}{1} = \frac{x}{5}$$

$$x = 5(\sin 20)$$

$$x \approx 1.7$$

- Try this one.

2.



- This time you are given "a" and "h" which is cosine.

$$\cos = \frac{a}{h}$$

$$\cos 40 = \frac{8}{x}$$

$$\frac{\cos 40}{1} = \frac{8}{x}$$

$$x(\cos 40) = 8$$

$$x = \frac{8}{\cos 40}$$

$$x \approx 10.4$$

Indirect Measurements. ☺

- Measure the height of a tree. You stand 45 feet from the base of the tree. The angle measure from the ground to the top of the tree is 59°.

- *What trig ratio would use?*

$$\tan = \frac{o}{a} \qquad \tan 59^\circ = \frac{x}{45}$$

- *Find the height of the tree.*

$$\frac{\tan 59^\circ}{1} = \frac{x}{45} \qquad x = 45(\tan 59^\circ)$$

$$x \approx 74.9$$