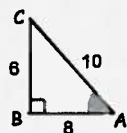


**2.4 Tangent Ratio** - A ratio (fraction) that compares the length of the opposite side of a right triangle to the adjacent side of a right triangle.

Key Points - always start at the reference angle.  
- your calculator must be in degree mode.

Example 1 - Find the measure of angle A



From  $\angle A$  6 is the opposite and 8 is the adjacent.

Tangent A =  $\frac{\text{opposite side}}{\text{adjacent side}}$

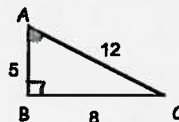
$$\text{Tangent A} = \frac{6}{8}$$

$$\text{Tangent A} = 0.75$$

$$\text{Tangent A}^{-1} = 36.869$$

$$\angle A = 36.8$$

Example 2 - Find the measure of angle A



Solution

Tangent A =  $\frac{\text{opposite side}}{\text{adjacent side}}$

$$\text{Tangent A} = \frac{5}{8}$$

$$\text{Tangent A} = 1.6$$

$$\text{Tangent}^{-1} A = 58$$

Key Point - When looking for an angle measure you must use the shift Tan button or  $\text{Tan}^{-1}$ .

Feb 2-1:54 PM

Feb 2-1:54 PM

Textbook Assignment - page 79 # 1, 2  
page 81 # 11

Answers

1a) B) C) D)

2a) B) C) D)

11)  $\text{Tan A} = \frac{\text{opposite}}{\text{adjacent}}$

**2.4 Tangent Ratio** - A ratio (fraction) that compares the length of the opposite side of a right triangle to the adjacent side of a right triangle.

Example 3 - Use tangent to find the missing side length.



Solution

Tangent C =  $\frac{\text{opposite side}}{\text{adjacent side}}$

$$\frac{\text{Tan } 36}{1} = \frac{x}{8} \quad \text{add a 1 to create a proportion}$$

$$\frac{\text{Tan } 36}{1} = \frac{x}{8} \quad \text{cross multiply then divide}$$

$$1x = \text{Tan } 36 \times 8$$

$$1x = (0.7265) \times 8$$

$$x = 5.81$$

Feb 2-1:54 PM

Feb 2-1:54 PM