

Trigonometric Functions - Guided Lesson Explanation**Explanation#1**

opposite = 2, adjacent = 5

Remember the Pythagorean theorem:

$$a^2 + b^2 = c^2$$

$$(\text{opposite})^2 + (\text{adjacent})^2 = (\text{hypotenuse})^2$$

$$(2)^2 + (5)^2 = (\text{hypotenuse})^2$$

$$4 + 25 = (\text{hypotenuse})^2$$

$$(\text{hypotenuse})^2 = 29$$

$$\text{Hypotenuse} = \sqrt{29}$$

$$\text{Hypotenuse} = 5.38$$

$$\text{cosec } \theta = 1 / \sin \theta$$

$\sin \theta = \text{opposite} / \text{hypotenuse}$

$$\sin \theta = 2/5.38$$

$$\text{cosec } \theta = 1 / \sin \theta$$

$$\text{cosec } \theta = 1 / 2/5.38$$

$$\text{cosec } \theta = 5.38/2$$

Answer is: $\text{cosec } \theta = 5.38/2$

Explanation#2

adjacent = 5, hypotenuse = 6

Remember the Pythagorean theorem:

$$a^2 + b^2 = c^2$$

$$(\text{opposite})^2 + (\text{adjacent})^2 = (\text{hypotenuse})^2$$

$$(\text{opposite})^2 + (5)^2 = (6)^2$$

$$(\text{opposite})^2 = (5)^2 + (6)^2$$

$$(\text{opposite})^2 = 25 + 36$$

$$\text{opposite} = \sqrt{61}$$

$$\text{opposite} = 7.81$$

Step 3) $\tan \theta = \text{opposite} / \text{adjacent}$

$$\tan \theta = 7.81/5$$

$$\tan \theta = 1.562$$

Answer is: $\tan \theta = 1.562$



Name _____

Date _____

Explanation#3

adjacent = 2, hypotenuse = 5

Remember the Pythagorean theorem:

$$a^2 + b^2 = c^2$$

$$(\text{opposite})^2 + (\text{adjacent})^2 = (\text{hypotenuse})^2$$

$$(\text{opposite})^2 + (4)^2 = (5)^2$$

$$(\text{opposite})^2 = 25 - 16$$

$$(\text{opposite})^2 = 9$$

$$(\text{opposite})^2 = \sqrt{9}$$

$$\text{Opposite} = 6.40$$

$$\text{Cot } \theta = 1/\tan \theta$$

$$\text{Tan } \theta = \text{Opposite/ Adjacent}$$

$$\text{Tan } \theta = 6.40/4$$

$$\text{Tan } \theta = 1.6$$

$$\text{Cot } \theta = 1/\tan \theta$$

$$\text{Cot } \theta = 1/1.6$$

