

## The Trigonometric and Reciprocal Trigonometric Ratios

### The Primary Trigonometric Ratios

$$\sin \theta = \underline{\hspace{2cm}}$$

$$\cos \theta = \underline{\hspace{2cm}}$$

$$\tan \theta = \underline{\hspace{2cm}}$$

### The Reciprocal Trigonometric Ratios

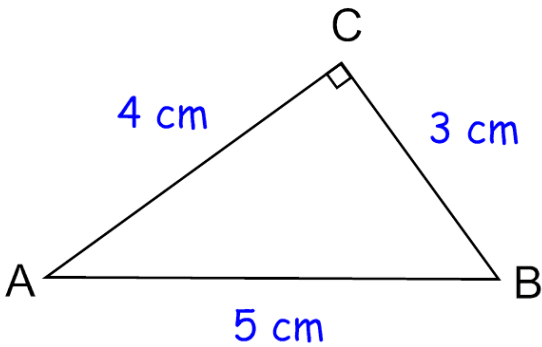
$$\csc \theta = \underline{\hspace{2cm}}$$

$$\sec \theta = \underline{\hspace{2cm}}$$

$$\cot \theta = \underline{\hspace{2cm}}$$

### Example

Determine **all** the trigonometric ratios for triangle ABC.



## Questions

1. What are the restrictions on  $\sin \theta$  and  $\cos \theta$ ? Explain.
2. What are the restrictions on  $\csc \theta$ ,  $\sec \theta$ ? Explain.
3. What are the restrictions on  $\tan \theta$ ? Explain.
4. What are the restrictions on  $\cot \theta$ ? Explain.
5. Given the triangle below.
  - a. Determine the length of the missing side to one decimal place.
  - b. Express one unknown angle in terms of a primary trigonometric ratio and the other in terms of a reciprocal ratio and calculate the angles.

