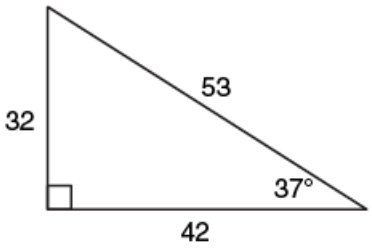
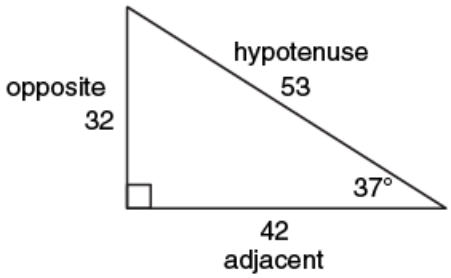
Setting up Ratios

1. State and evaluate the tangent ratio, the sine ratio, and the cosine ratio for the acute angle provided in the diagram.

a.



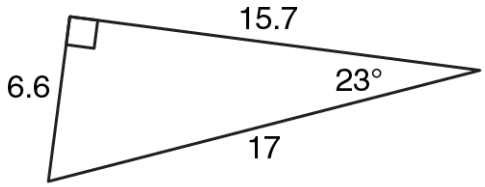
Step 1: Identify and label the sides as being adjacent to, opposite, and hypotenuse, in relation to the angle indicated.



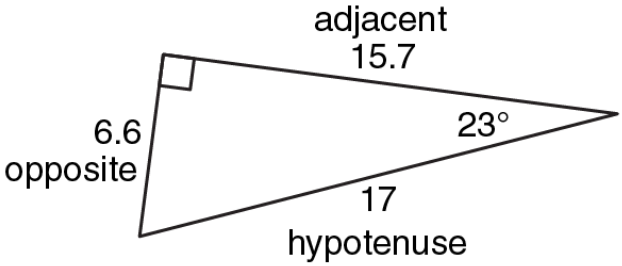
Step 2: State the appropriate ratios.

Tangent	Sine	Cosine
$\tan\theta = \frac{opposite}{adjacent}$ $\tan 37° = \frac{32}{42}$ $\tan 37° = 0.762$	$\sin\theta = \frac{opposite}{hypotenuse}$ $\sin 37° = \frac{32}{53}$ $\sin 37° = 0.603$	$\cos\theta = \frac{adjacent}{hypotenuse}$ $\cos 37° = \frac{42}{53}$ $\cos 37° = 0.792$

b.



Step 1: Identify and label the sides as being adjacent to, opposite, and hypotenuse, in relation to the angle indicated.



Step 2: State the appropriate ratios.

Tangent	Sine	Cosine
$\tan\theta = \frac{opposite}{adjacent}$ $\tan 23° = \frac{6.6}{15.7}$ $\tan 37° = 0.420$	$\sin\theta = \frac{opposite}{hypotenuse}$ $\sin 23° = \frac{6.6}{17}$ $\sin 23° = 0.388$	$\cos\theta = \frac{adjacent}{hypotenuse}$ $\cos 23° = \frac{15.7}{17}$ $\cos 23° = 0.924$