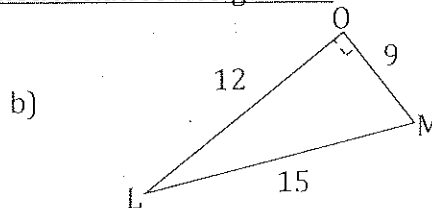
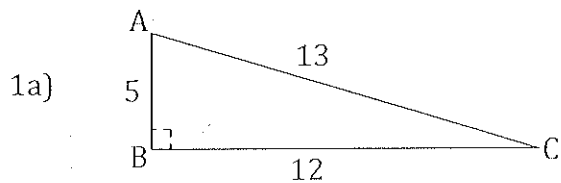


The Primary Trigonometric Ratios Assignment



Find the length of the side that is:

The hypotenuse: 13

Adjacent to C: 12

Opposite to C: 5

Find the length of the side that is:

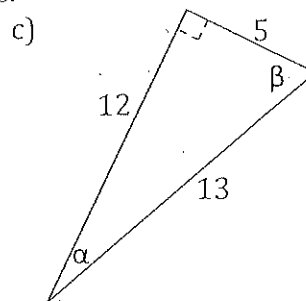
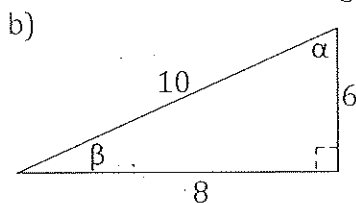
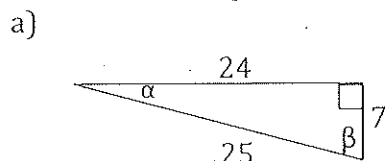
The hypotenuse: 15

Opposite to L: 9

Adjacent to M: 9

Opposite to M: 12

1. Write the required ratio in fraction form for the following triangles.



$\sin \alpha = \frac{7}{25}$

$\cos \alpha = \frac{24}{25}$

$\tan \alpha = \frac{7}{24}$

$\sin \beta = \frac{24}{25}$

$\cos \beta = \frac{7}{25}$

$\tan \beta = \frac{24}{7}$

$\sin \alpha = \frac{6}{10} = \frac{3}{5}$

$\cos \alpha = \frac{8}{10} = \frac{4}{5}$

$\tan \alpha = \frac{6}{8} = \frac{3}{4}$

$\sin \beta = \frac{8}{10} = \frac{4}{5}$

$\cos \beta = \frac{6}{10} = \frac{3}{5}$

$\tan \beta = \frac{8}{6} = \frac{4}{3}$

$\sin \alpha = \frac{5}{13}$

$\cos \alpha = \frac{12}{13}$

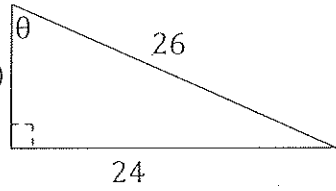
$\tan \alpha = \frac{5}{12}$

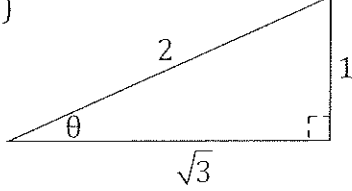
$\sin \beta = \frac{12}{13}$

$\cos \beta = \frac{5}{13}$

$\tan \beta = \frac{12}{5}$

2. Write the required ratio in fraction AND decimal form (3 decimal places).

a)  $\sin\theta = \frac{24}{26} = \frac{12}{13}$
 $= 0.923$
 $\cos\theta = \frac{10}{26} = \frac{5}{13}$
 $= 0.385$
 $\tan\theta = \frac{24}{10} = \frac{12}{5}$
 $= 2.4$

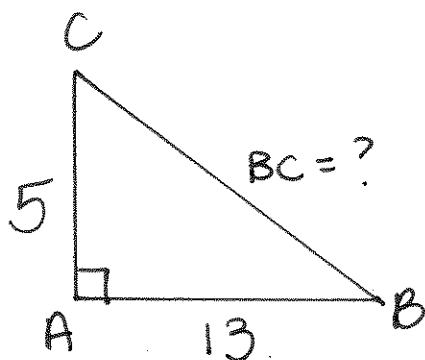
b)  $\sin\theta = \frac{1}{2}$
 $= 0.5$
 $\cos\theta = \frac{\sqrt{3}}{2}$
 $= 0.866$
 $\tan\theta = \frac{1}{\sqrt{3}}$
 $= 0.577$

3. Find the required ratio in decimal form (to three decimal places).

a) $\sin 20^\circ = 0.342$ b) $\cos 37^\circ = 0.799$ c) $\tan 80^\circ = 5.671$
d) $\sin 65^\circ = 0.906$ e) $\tan 89^\circ = 57.290$ f) $\sin 72^\circ = 0.951$
g) $\cos 63^\circ = 0.454$ h) $\cos 1^\circ = 1.000$ i) $\tan 18^\circ = 0.325$
j) $\sin 17^\circ = 0.292$ k) $\sin 24^\circ = 0.407$ l) $\cos 46^\circ = 0.695$
m) $\tan 37^\circ = 0.754$ n) $\tan 52^\circ = 1.280$ o) $\tan 45^\circ = 1$

4. Draw a right triangle that satisfies the following criteria. Find the length of the missing side.

a) $\triangle ABC$ where $\angle A = 90^\circ$, the side opposite $\angle B$ is 5 and the side adjacent to $\angle B$ is 13.

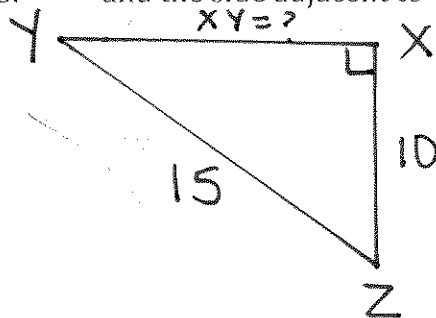


$$5^2 + 13^2 = BC^2$$

$$194 = BC^2$$

$$BC = \sqrt{194} = 13.93$$

b) $\triangle XYZ$ where $\angle X = 90^\circ$, the hypotenuse is 15 and the side adjacent to $\angle Z$ is 10.



$$XY^2 + 10^2 = 15^2$$

$$XY^2 = 15^2 - 10^2$$

$$XY^2 = 125$$

$$XY = \sqrt{125}$$

$$= 11.18$$