Mathematics 10   Name: **Key**
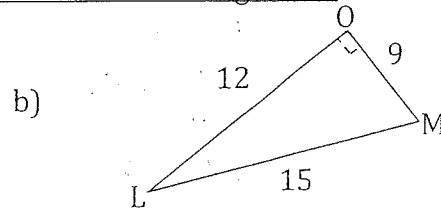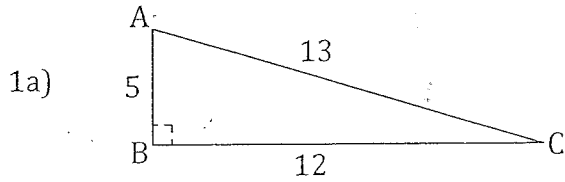Chapter 2: Trigonometry

The Primary Trigonometric Ratios Assignment

1a)

Find the length of the side that is:

The hypotenuse: ___13___

Adjacent to C: ___12___

Opposite to C: ___5___

b)

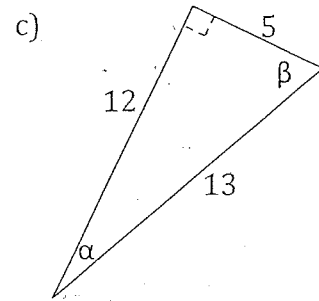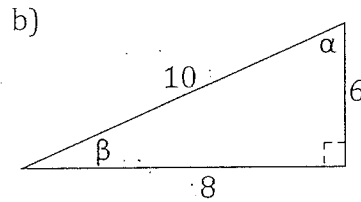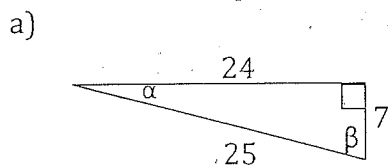Find the length of the side that is:

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.

a)

b)

c)

Sin α = $\dfrac{7}{25}$

Cos α = $\dfrac{24}{25}$

Tan α = $\dfrac{7}{24}$

Sin β = $\dfrac{24}{25}$

Cos β = $\dfrac{7}{25}$

Tan β = $\dfrac{24}{7}$

Sin α = $\dfrac{8}{10} = \dfrac{4}{5}$

Cos α = $\dfrac{6}{10} = \dfrac{3}{5}$

Tan α = $\dfrac{8}{6} = \dfrac{4}{3}$

Sin β = $\dfrac{6}{10} = \dfrac{3}{5}$

Cos β = $\dfrac{8}{10} = \dfrac{4}{5}$

Tan β = $\dfrac{6}{8} = \dfrac{3}{4}$

Sin α = $\dfrac{5}{13}$

Cos α = $\dfrac{12}{13}$
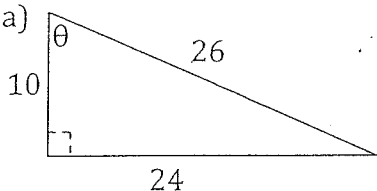
Tan α = $\dfrac{5}{12}$
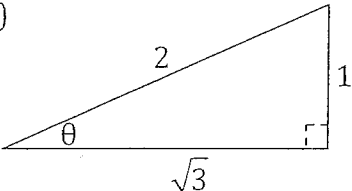
Sin β = $\dfrac{12}{13}$

Cos β = $\dfrac{5}{13}$

Tan β = $\dfrac{12}{5}$

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

a)

$\sin\theta = \dfrac{24}{26} = \dfrac{12}{13}$

$= 0.923$

$\cos\theta = \dfrac{10}{26} = \dfrac{5}{13}$

$= 0.385$

$\tan\theta = \dfrac{24}{10} = \dfrac{12}{5}$

$= 2.4$

b)

$\sin\theta = \dfrac{1}{2}$

0.5

$\cos\theta = \dfrac{\sqrt{3}}{2}$

$= 0.866$

$\tan\theta = \dfrac{1}{\sqrt{3}}$

$= 0.577$

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

a) $\sin 20° =$ __0.342__

b) $\cos 37° =$ __0.799__

c) $\tan 80° =$ __5.671__

d) $\sin 65° =$ __0.906__

e) $\tan 89° =$ __57.290__

f) $\sin 72° =$ __0.951__

g) $\cos 63° =$ __0.454__

h) $\cos 1° =$ __1.000__

i) $\tan 18° =$ __0.325__

j) $\sin 17° =$ __0.292__

k) $\sin 24° =$ __0.407__

l) $\cos 46° =$ __0.695__

m) $\tan 37° =$ __0.754__

n) $\tan 52° =$ __1.280__

o) $\tan 45° =$ __1__

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

a) $\triangle ABC$ where $\angle A = 90°$, the side opposite $\angle B$ is 5 and the side adjacent to $\angle B$ is 13.
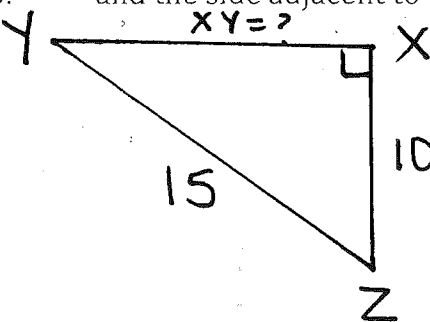
b) $\triangle XYZ$ where $\angle X = 90°$, the hypotenuse is 15 and the side adjacent to $\angle Z$ is 10.
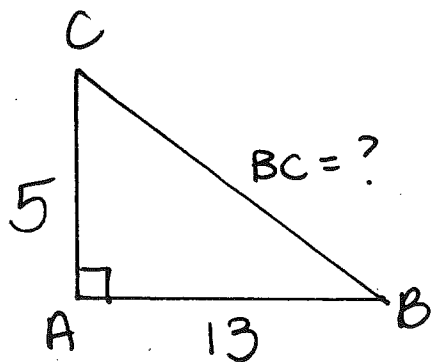
$5^2 + 13^2 = BC^2$

$194 = BC^2$

$BC = \sqrt{194} = 13.93$

$XY = ?$

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

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

$XY^2 = 125$

$XY = \sqrt{125}$

$= 11.18$