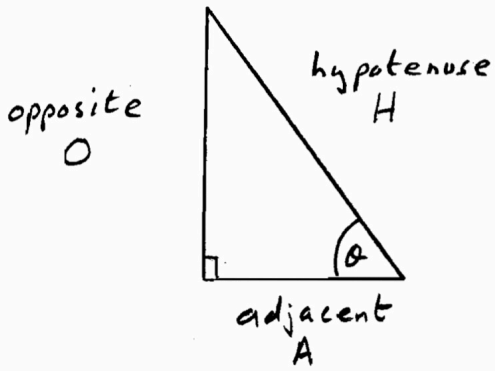
BASIC TRIGONOMETRY

TRANSCRIPT



$$\sin = \frac{O}{H}$$

$$\cos = \frac{A}{H}$$

$$\tan = \frac{O}{A}$$

The hypotenuse of a right-angled triangle is always the longest side, the one opposite the right-angle.

However, the opposite and adjacent sides are defined according to which angle we are considering.

SOHCAHTOA can be a useful aid to remembering the definitions of the 3 basic trigonometric ratios.

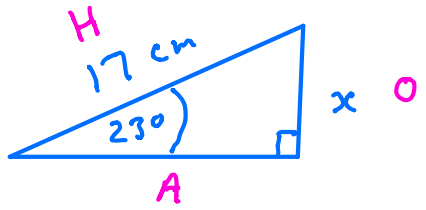
SOH $\sin = \frac{O}{H}$ CAH $\cos = \frac{A}{H}$ TOA $\tan = \frac{O}{A}$

If this does not help, then try learning

Some Old Horses Can Always Hear Their Owners Approaching.

Basic trigonometry can be used to calculate the lengths of sides and the sizes of angles in right-angled triangles.

Ex 1



Find x

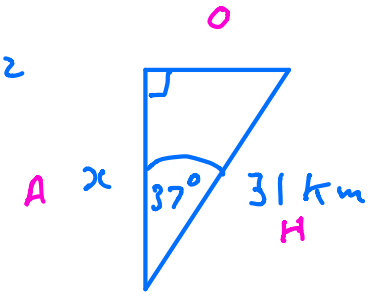
$$\sin = \frac{O}{H}$$

$$\sin 23^\circ = \frac{x}{17}$$

$$17 \sin 23^\circ = x$$

$$\underline{x = 6.64 \text{ cm}}$$

Ex 2



Find x

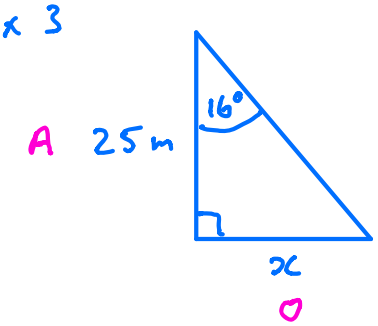
$$\cos = \frac{A}{H}$$

$$\cos 37^\circ = \frac{x}{31}$$

$$31 \cos 37^\circ = x$$

$$\underline{x = 24.8 \text{ km}}$$

Ex 3



Find x

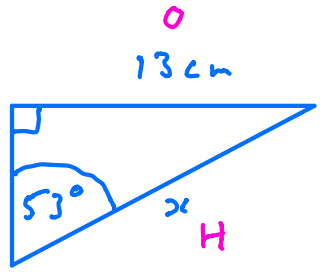
$$\tan = \frac{O}{A}$$

$$\tan 16^\circ = \frac{x}{25}$$

$$25 \tan 16^\circ = x$$

$$\underline{x = 7.17 \text{ m}}$$

Ex 4



Find x

$$\sin = \frac{O}{H}$$

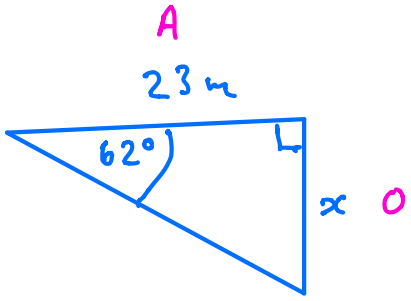
$$\sin 53^\circ = \frac{13}{x}$$

$$x \sin 53^\circ = 13$$

$$x = \frac{13}{\sin 53^\circ}$$

$$x = 16.3 \text{ cm}$$

Ex 5



Find x

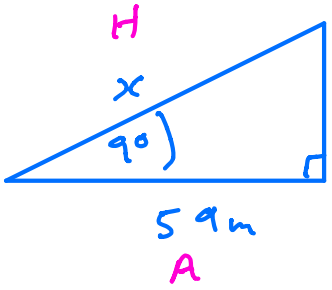
$$\tan = \frac{O}{A}$$

$$\tan 62^\circ = \frac{x}{23}$$

$$23 \tan 62^\circ = x$$

$$x = 43.3 \text{ m}$$

Ex 6



Find x

$$\cos = \frac{A}{H}$$

$$\cos 9^\circ = \frac{59}{x}$$

$$x \cos 9^\circ = 59$$

$$x = \frac{59}{\cos 9^\circ}$$

$$x = 59.7 \text{ m}$$