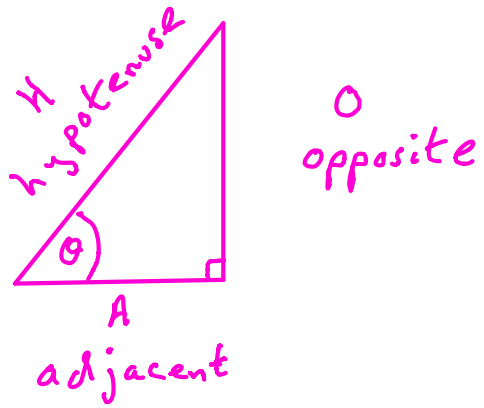
Basic Trigonometry Review

SOHCAHTOA

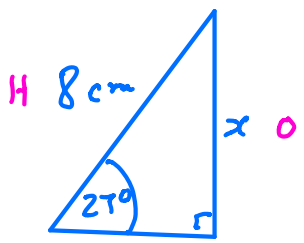


$$\sin = \frac{O}{H}$$

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

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

Ex 1



Find x

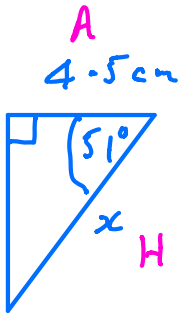
$\sin = \frac{O}{H}$

$$\sin 27^\circ = \frac{x}{8}$$

$$x = 8\sin 27^\circ$$

$$x = 3.63$$

Ex 2



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

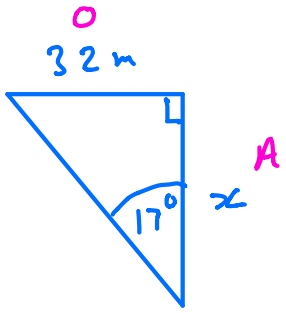
$$\cos 51^\circ = \frac{4.5}{x}$$

$$x\cos 51^\circ = 4.5$$

$$x = \frac{4.5}{\cos 51^\circ}$$

$$x = 7.15\text{ cm}$$

Ex 3



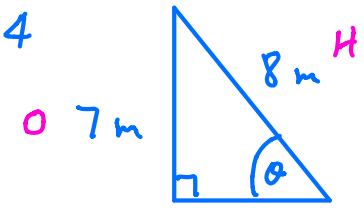
$\tan = \frac{O}{A}$

$$\tan 17^\circ = \frac{32}{x}$$

$$x\tan 17^\circ = 32$$

$$x = \frac{32}{\tan 17^\circ} = 104.7\text{ m}$$

Ex 4



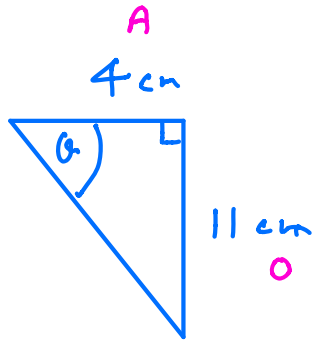
$\sin = \frac{O}{H}$

$\sin\theta = \frac{7}{8}$

$\theta = \sin^{-1}\left(\frac{7}{8}\right)$

$\theta = 61.0^\circ$

Ex 5



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

$\tan\theta = \frac{11}{4}$

$\theta = \tan^{-1}\left(\frac{11}{4}\right)$

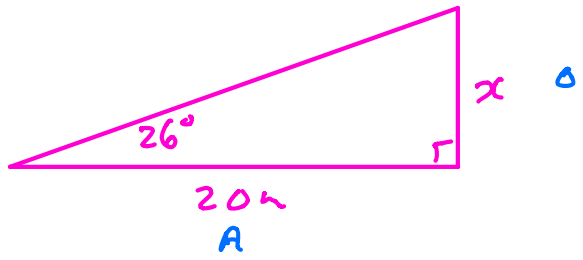
$\theta = 70.0^\circ$

Josh walks 20m away from L-Block. Using a clinometer 1.5m above the ground, he measures the angle of elevation to be 26°

Q1 How high is L-Block?

Josh then walks a further 15m away from L-Block.

Q2 What would be the angle of elevation (of top) measured from 1.5m?

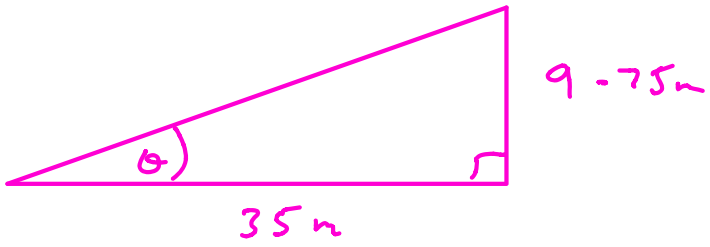


$$\tan 26 = \frac{x}{20}$$

$$20\tan 26 = x$$

$$x = 9.75\text{ m}$$

$$\text{Height} = 9.75 + 1.5 = 11.25\text{ m}$$



$$\tan\theta = \frac{9.75}{35}$$

$$\theta = \tan^{-1}\left(\frac{9.75}{35}\right)$$

$$\theta = 15.6^\circ$$