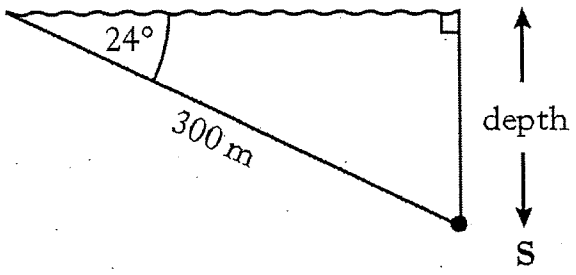
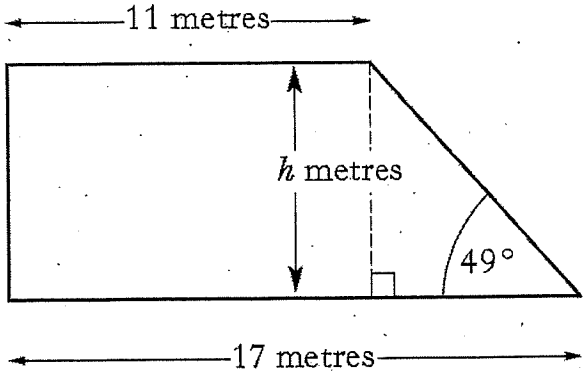
Practice Questions with answers (2)

Trigonometry (SOHCAHTOA) Practice Questions

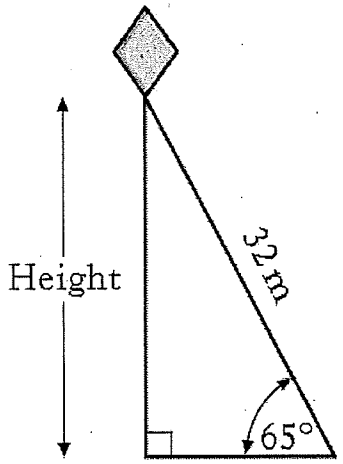
1. A submarine, **S**, dives for 300 metres at an angle of 24° to the surface. Calculate the depth of the submarine as shown in the diagram. 3



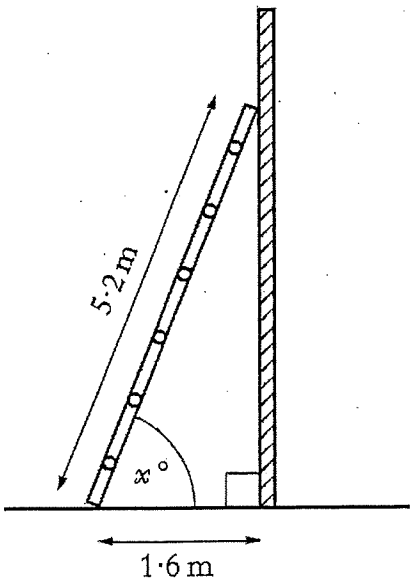
2. Calculate the height, *h* metres, of the trapezium shown below. 3



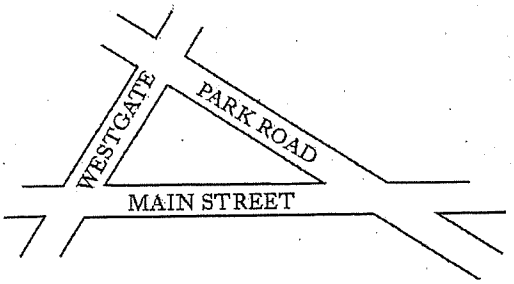
3. Kate is flying a kite.
She lets out 32 metres of string, pulled tight, at 65° to the ground.
Calculate the height of the kite as shown in the diagram. 3

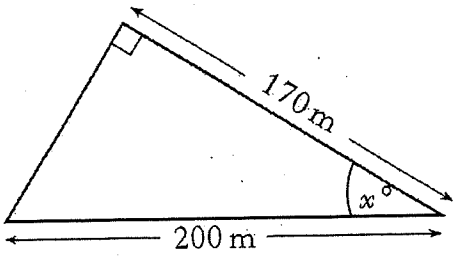


4. A ladder which is 5·2 metres long is placed against a wall.
The foot of the ladder is 1·6 metres from the wall.
The size of the angle between the ladder and the ground is x °.
Calculate x. 3



5. Three roads form a right angled triangle as shown in the diagram.

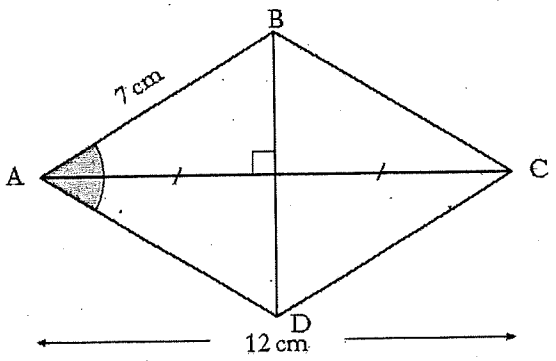




- Main Street is 200 metres long.
- Park Road is 170 metres long.
- The angle between Westgate and Park Road is 90 °.

The size of the angle between Main Street and Park Road is x °.
Calculate x.
Give your answer to **one decimal place**. 4

6. ABCD is a rhombus.
Side AB is 7 centimetres and diagonal AC is 12 centimetres as shown.
Calculate the size of the shaded angle BAD. 3



ANSWERS

1. $\sin x° = \frac{opp}{hyp}$

$\sin 24° = \frac{d}{300}$

$300 \times \sin 24° = d$

$d = 122 \text{ m}$

2. $17 - 11 = 6 \text{ m}$

$\tan x° = \frac{opp}{adj}$

$\tan 49° = \frac{h}{6}$

$6 \times \tan 49° = h$

$h = 6 \cdot 9 \text{ m}$

3. $\sin x° = \frac{opp}{hyp}$

$\sin 65° = \frac{H}{32}$

$32 \times \sin 65° = H$

$H = 29 \text{ m}$

4. $\cos x° = \frac{adj}{hyp}$

$\cos x° = \frac{1 \cdot 6}{5 \cdot 2}$

$\cos x° = 0 \cdot 3076923077$

$x = \cos^{-1} 0 \cdot 3076923077$

$x = 72 \cdot 1°$

5. $\cos x° = \frac{adj}{hyp}$

$\cos x° = \frac{170}{200}$

$\cos x° = 0 \cdot 85$

$x = \cos^{-1} 0 \cdot 85$

$x = 31 \cdot 8°$

6. $12 \div 2 = 6$ cm

$\cos x° = \frac{adj}{hyp}$

$\cos x° = \frac{6}{7}$

$\cos x° = 0 \cdot 8571428571$

$x = \cos^{-1} 0 \cdot 85\,71428571$

$x = 31°$

Angle BAD = $2 \times 31 = 62°$