GCSE HIGHER · REVISION MAT 5

Exact trigonometric values

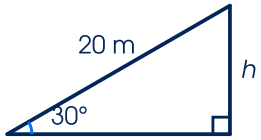
1 Write down the exact value of tan 30°.

2 Write down the exact value of cos 90°.

3 Show that sin 45° = cos 45°.

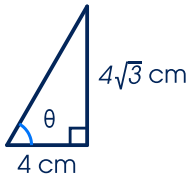
4 A kite string is 20 m long and makes an angle of 30° with the ground.

Find the exact height of the kite.



5 Show that $4 \sin 30° \cos 30° = \sqrt{3}$.

6 Find the angle θ exactly.



7 Use a right-angled triangle to explain why cos 60° = sin 30°.

8 Find the exact area of a regular hexagon of side 4 cm.



ANSWERS · REVISION MAT 5

Exact trigonometric values

1 $\frac{1}{\sqrt{3}} = \frac{\sqrt{3}}{3}$

2 0

3 Both equal $\frac{\sqrt{2}}{2}$.

4 20 sin 30°

10 m

5 $4 \times \frac{1}{2} \times \frac{\sqrt{3}}{2}$

$= \sqrt{3}$

6 $\tan\theta = \frac{4\sqrt{3}}{4} = \sqrt{3}$

$\theta = 60°$

7 The other angle is 30°: the side adjacent to 60° is opposite 30°.

8 6 equilateral triangles of area $4\sqrt{3}$

$24\sqrt{3}$ cm²

Mr&Mrs MATHS