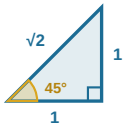
Guide to:
Exact trig. values

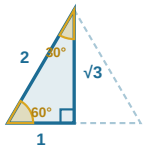
maths Links

Explanation:

For non-calculator exams, recall the exact values of **sin θ**, **cos θ**, and **tan θ** for **0°, 30°, 45°, 60°,** and **90°**. Derive them anytime from an isosceles right-angled triangle (legs **1, 1**, hypotenuse **√2**) and an equilateral triangle of side **2** split in half (sides **1, √3, 2**).

θ	0°	30°	45°	60°	90°
sin θ	0	$\frac{1}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{3}}{2}$	1
cos θ	1	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{1}{2}$	0
tan θ	0	$\frac{\sqrt{3}}{3}$	1	√3	—





Example 1: Work out the exact value of **sin 30° + cos 60° + tan 45°**.

Solution:

Substitute: $\frac{1}{2} + \frac{1}{2} + 1 = \mathbf{2}$

Answer: 2

Example 2: Find the exact side **x** opposite **60°** in a right-angled triangle with hypotenuse **12 cm**.

Solution:

$x = 12 \times \sin 60° = 12 \times \frac{\sqrt{3}}{2} = \mathbf{6\sqrt{3}\ cm}$

Answer: 6√3 cm

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Maths Genie	Qs	Ans	Maths Made Easy	Qs	Ans
Corbettmaths (Practice)	Qs	Ans	Metatutor	Qs	Ans
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