Trigonometry: flowchart

Planner week 15 · Side or angle? Follow the arrows

A right-angled triangle with an angle

Are you finding a side or an angle?
first label hyp, opp and adj from the angle

Side / Angle

Missing SIDE

Hypotenuse 16 cm, angle 38°. Find x, the side opposite the angle.

1. Tick the two sides: **opp** and **hyp** → **SOH**
2. sin 38° = x ÷ 16
3. Side on top: multiply · x = 16 × sin 38° = **9.85 cm**

✓ side on the bottom? divide

Missing ANGLE

Adjacent 7 cm, hypotenuse 11 cm. Find the angle θ.

1. Tick the two sides: **adj** and **hyp** → **CAH**
2. cos θ = 7 ÷ 11
3. SHIFT cos: θ = $\cos^{-1}(7 \div 11)$ = **50.5°**

✓ use $\sin^{-1}$, $\cos^{-1}$ or $\tan^{-1}$

Is the hypotenuse still the longest side?

No → **Check** labels and degrees (D)

Yes

Round only at the end, to what the question asks
Non-calculator? sin 30° = 0.5 · cos 60° = 0.5 · tan 45° = 1

The big question

Am I finding a **side** or an **angle**? Which **two sides** are in the question?

SOH sin = opp ÷ hyp
CAH cos = adj ÷ hyp
TOA tan = opp ÷ adj

Key words

Hypotenuse: longest, opposite the right angle
Opposite: facing the angle
Adjacent: next to the angle (not the hyp)

Watch out

- Calculator in degrees: D on the screen.
- No angle in the question? Use Pythagoras.
- Label from the angle you are using.