



Trigonometric Ratios: Finding an Angle

Mana Maths

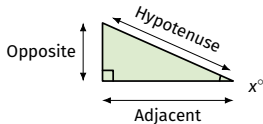
Trig Ratios - Finding an Angle



Key idea

For an unknown angle, form the ratio and use $\sin^{-1}$, $\cos^{-1}$, or $\tan^{-1}$.

Label relative to x



Using inverse tangent

Opposite = 7, adjacent = 12:

$$\tan x = \frac{7}{12}$$

$$x = \tan^{-1}(7/12) = 30.3^\circ$$

Common mistake

Do not report 0.583 as the angle.
Use $\tan^{-1}$.

 = **copy this into your book.** Boxes without a pencil are just to read.

Choose the Inverse Ratio



Key idea

Choose from the known sides:
O/H $\rightarrow \sin^{-1}$, A/H $\rightarrow \cos^{-1}$, O/A
 $\rightarrow \tan^{-1}$.

Calculator check

Use degree mode. An acute angle must be between 0° and 90° .

Using inverse cosine

Adjacent = 9, hypotenuse = 14:

$$\cos X = \frac{9}{14}$$

$$X = \cos^{-1}(9/14) = 50.0^\circ$$

Common mistake

Label opposite and adjacent from the unknown angle before choosing.



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