

Trig Basics Key

Using your calculator, give the following ratios.

$\cos 30^\circ = \underline{.8660}$	$\tan 85^\circ = \underline{11.4}$
$\tan 15^\circ = \underline{.2679}$	$\cos 45^\circ = \underline{.7071}$
$\sin 60^\circ = \underline{.8660}$	$\cos 60^\circ = \underline{.5}$
$\tan 30^\circ = \underline{.5773}$	$\sin 30^\circ = \underline{.5}$
$\sin 45^\circ = \underline{.7071}$	$\tan 45^\circ = \underline{1}$

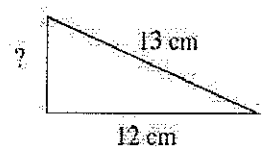
Given the following ratios, use your calculator to find θ .

$\cos \theta = .8192$ $\theta = \underline{35^\circ}$	$\sin \theta = .866$ $\theta = \underline{\quad}$	$\tan \theta = 1$ $\theta = \underline{\quad}$
$\sin \theta = 0.5$ $\theta = \underline{\quad}$	$\tan \theta = 1.732$ $\theta = \underline{\quad}$	$\cos \theta = .866$ $\theta = \underline{\quad}$
$\tan \theta = .8391$ $\theta = \underline{\quad}$	$\cos \theta = 0.5$ $\theta = \underline{\quad}$	$\sin \theta = .7071$ $\theta = \underline{\quad}$

What is the sin of 75° ?
 $\underline{.9659}$

If $\tan \theta = 0.868$, solve for θ .
 $\theta = \tan^{-1}(0.868) = \underline{41^\circ}$

Two sides of this triangle are given. Calculate the third side.



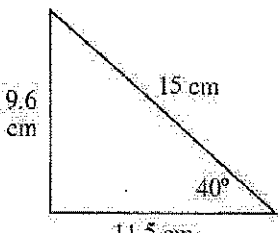
$a^2 + b^2 = c^2$
 $12^2 + 5^2 = 13^2$
 $144 + 25 = 169$
 $a = \sqrt{169 - 144} = 5 \text{ cm}$

$\theta = \underline{40^\circ}$

Opposite = $\underline{9.6 \text{ cm}}$

Adjacent = $\underline{11.5 \text{ cm}}$

Hypotenuse = $\underline{15 \text{ cm}}$

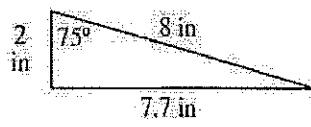


$\theta = \underline{75^\circ}$

Opposite = $\underline{7.7 \text{ in}}$

Adjacent = $\underline{2 \text{ in}}$

Hypotenuse = $\underline{8 \text{ in}}$



Adjacent for $20^\circ = \underline{10 \text{ mm}}$

Hypotenuse for $70^\circ = \underline{120 \text{ mm}}$

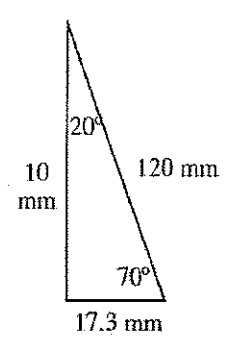
Opposite for $70^\circ = \underline{10 \text{ mm}}$

Hypotenuse for $20^\circ = \underline{120 \text{ mm}}$

Adjacent for $70^\circ = \underline{17.3 \text{ mm}}$

Opposite for $20^\circ = \underline{17.3 \text{ mm}}$

If opposite = 17.3 cm, then $\theta = \underline{20^\circ}$



Opposite for $30^\circ = \underline{10 \text{ m}}$

Hypotenuse for $60^\circ = \underline{20 \text{ m}}$

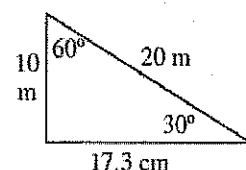
Adjacent for $60^\circ = \underline{10 \text{ m}}$

Hypotenuse for $30^\circ = \underline{20 \text{ m}}$

If opposite = 17.3 cm, then $\theta = \underline{60^\circ}$

If adjacent = 10 m, then $\theta = \underline{60^\circ}$

If adjacent = 17.3 cm, then $\theta = \underline{30^\circ}$

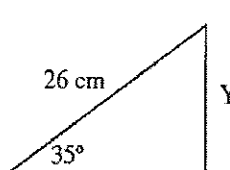


Step 1: Assign Variables

26 cm = $\underline{\text{hyp}}$

$35^\circ = \underline{\theta}$

$Y = \underline{\text{opp}}$



Step 2: Choose a Formula
(Sin, Cos, or Tan?)

$\sin \theta = \frac{\text{opp}}{\text{hyp}}$

Step 3: Solve

$\sin 35^\circ = \frac{Y}{26 \text{ cm}}$

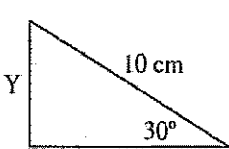
$Y = \underline{14.9 \text{ cm}}$

$\sin 30^\circ = \frac{Y}{10 \text{ cm}}$

$.988 = \frac{Y}{10 \text{ cm}}$

$Y = 9.88 \text{ cm}$

Obviously $Y \neq 9.88 \text{ cm}$.
What went wrong? $\underline{\text{in radians}}$



Following the three steps at the left, find the length of X.

$\theta = 45^\circ$

$\cos 45^\circ = \frac{X}{6 \text{ ft}}$

$\text{hyp} = 6 \text{ ft}$

$\text{adj} = X$

$X = 4.24 \text{ ft}$

$\cos \theta = \frac{\text{adj}}{\text{hyp}}$

How long is X ?

