

TRIGONOMETRIC RATIOS

Applies to RIGHT angle triangles ONLY

$$\sin A = \frac{o}{h}$$

$$\cos A = \frac{a}{h}$$

$$\tan A = \frac{o}{a}$$

Steps:

1. Identify the triangle
2. Determine appropriate ratio (s)
3. Input values and solve

SOHCAHTOA

Nov 28-10:02 AM

Finding the missing sides: SOHCAHTOA

(1) $\sin 40 = \frac{x}{6} \rightarrow 6 \sin 40 = x$
 $x = 3.85$

(2) $\cos 40 = \frac{x}{6} \rightarrow 6 \cos 40 = x$
 $x = 4.59$

~~SOHCAHTOA~~

(1) $\tan 60 = \frac{x}{4} \rightarrow 4 \tan 60 = x$
 $x = 6.93$

(2) $\cos 60 = \frac{4}{x} \rightarrow x \cos 60 = 4$
 $x = \frac{4}{\cos 60} = 8$

~~SOHCAHTOA~~

(1) $\sin 60 = \frac{8}{x} \rightarrow x \sin 60 = 8$
 $x = \frac{8}{\sin 60} = 9.24$

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Find the missing angles: SOHCAHTOA

$\tan x = \frac{2}{4} \rightarrow \tan x = 0.5$
 $x = \tan^{-1}(0.5) = 26.6^\circ$

$\sin x = \frac{2}{5} \rightarrow \sin x = 0.4$
 $x = \sin^{-1}(0.4) = 23.7^\circ$

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Solve the following triangles (means determine the measure of all its sides and angles):

SOHCAHTOA

a) $\sin 40 = \frac{5}{H} \rightarrow H = \frac{5}{\sin 40} = 7.64$

b) $\sin 40 = \frac{5}{10} \rightarrow \sin 40 = 0.5$
 $40 = \sin^{-1}(0.5) = 30^\circ$

c) $\sin 30 = \frac{6}{12} \rightarrow \sin 30 = 0.5$
 $30 = \sin^{-1}(0.5) = 30^\circ$

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d)

e)

f)

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Given that $\angle ABD = 34^\circ$. Find $m\overline{CD}$ in the diagram below.

$\cos 34 = \frac{6}{17} \rightarrow 17 \cos 34 = 6$
 $17 \cos 34 = 11.2$

$\sin 34 = \frac{6}{17} \rightarrow 17 \sin 34 = 9.4$
 $9.4 = 9.4$

$\cos 34 = \frac{6}{x} \rightarrow x \cos 34 = 6$
 $x = \frac{6}{\cos 34} = 7.2$

$\sin 34 = \frac{6}{x} \rightarrow x \sin 34 = 6$
 $x = \frac{6}{\sin 34} = 10.8$

$a^2 + b^2 = c^2$
 $6^2 + 8^2 = 10^2$
 $36 + 64 = 100$
 $100 = 100$

Dec 17-8:30 AM