

GMF 10 Lesson 8.2 (2)
 Nov. 28, 2019 **The Sine Ratio** 8.2
Cool Patterns:
 • Find $\sin 50^\circ$
 • Find $\sin 130^\circ$
 Workbook page 302
 What do you notice??
 Can you find another pair that is similar to this??

Dec 2-11:59 AM

302 MathWorks 10 Workbook
BUILD YOUR SKILLS
 7. Find the length of the hypotenuse in the following diagrams.
 a) $\sin 33^\circ = \frac{7.8}{h}$
 $h = \frac{7.8}{\sin 33}$
 $h = 14.3 \text{ mm}$
 b) $\sin 70^\circ = \frac{12.1}{h}$
 $h = \frac{12.1}{\sin 70}$
 $h = 12.9 \text{ cm}$

Apr 5-10:46 PM

What are the three basic trigonometry functions?

$\sin A = \frac{\text{opposite leg}}{\text{hypotenuse}}$
 $\sin A = \frac{a}{c}$
 $\sin B = \frac{b}{c}$
 $\cos A = \frac{\text{adjacent leg}}{\text{hypotenuse}}$
 $\cos A = \frac{b}{c}$
 $\cos B = \frac{a}{c}$
 $\tan A = \frac{\text{opposite leg}}{\text{adjacent leg}}$
 $\tan A = \frac{a}{b}$
 $\tan B = \frac{b}{a}$

Chief SoH-Cah-Toa

Nov 27-11:42 AM

Trig ratios

SOH CAH TOA

$SOH \rightarrow S = \frac{O}{H}$ Sine $(\sin)x = \frac{\text{opposite}}{\text{hypotenuse}}$

$CAH \rightarrow C = \frac{A}{H}$ Cosine $(\cos)x = \frac{\text{adjacent}}{\text{hypotenuse}}$

$TOA \rightarrow T = \frac{O}{A}$ Tangent $(\tan)x = \frac{\text{opposite}}{\text{adjacent}}$

Feb 13-4:41 PM

300 MathWorks 10 Workbook
7.3 The Cosine Ratio
NEW SKILLS: WORKING WITH THE COSINE RATIO TO SOLVE TRIANGLES
 Another important trigonometric ratio of right triangles is the ratio of the side adjacent to the given acute angle to the hypotenuse. This is called the **cosine ratio**.
 For a given angle A, the cosine ratio can be stated as follows:
 $\cosine \angle A = \frac{\text{length of side adjacent to } \angle A}{\text{length of hypotenuse}}$
 This ratio can be abbreviated as follows:
 $\cos A = \frac{\text{adj}}{\text{hyp}}$

 For triangle ABC, the cosine of $\angle A$ can be stated as the following:
 $\cos A = \frac{b}{c}$
 For more details, see page 293 of MathWorks 10.

312 MathWorks 10 Workbook
BUILD YOUR SKILLS
 3. How far from the base of a flagpole must a guy wire be fixed if the wire is 12 metres long and it makes an angle of 63° with the ground?
 $\cos 63^\circ = \frac{?}{12}$
 $? = 12 (\cos 63^\circ)$
 $? = 5.4 \text{ m}$

Nov 28-9:41 AM

HOMEWORK

Pg. 302 - 303 Q. 8 & 9
Pg. 305 Q 11 & 12

Trigonometry - Finding sides (1)


Worksheet: All Trig Functions

May 8-11:33 PM

Nov. 28, 2019

TRIGONOMETRY – FINDING SIDES (1)

Notes:



1. Label sides: o, a, h
2. Choose a suitable ratio:

$$\sin = \frac{o}{h} \quad \cos = \frac{a}{h} \quad \tan = \frac{o}{a}$$
3. Calculate side:








$$\sin 30 = \frac{x}{30}$$

$$12 \times \sin 30 = x \quad [12 \times \sin 30 = 6m = x]$$

Exercises:

1. Calculate the unknown side in each of the following:

a) $\sin 20 = \frac{d}{15}$	d) $\sin 52 = \frac{d}{32}$
b) $\cos 37 = \frac{b}{30}$	e) $\cos 10 = \frac{e}{18}$
c) $\tan 64 = \frac{c}{5}$	f) $\tan 25 = \frac{f}{22}$
2. Calculate the lengths of the lettered sides in each of the following. All measurements are in meters.

		
		
3. A flagpole is held upright by 30m long wires to the ground. If the wires make an angle of 25° to the ground, how high is the flagpole?
 

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