

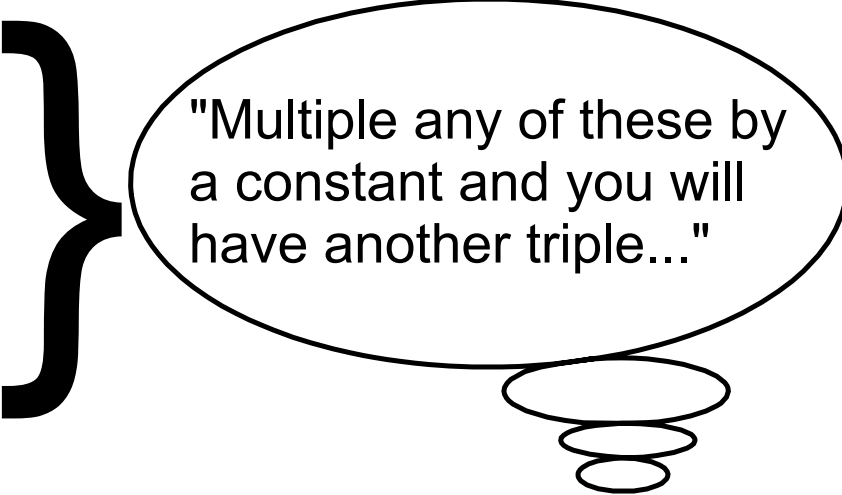
Remember... Common Pythagorean Triples

1) $3 - 4 - 5$

2) $5 - 12 - 13$

3) $8 - 15 - 17$

4) $7 - 24 - 25$

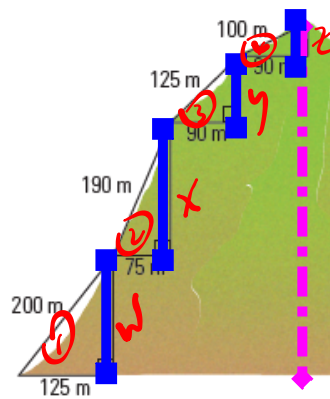


"Multiple any of these by a constant and you will have another triple..."

HOMEWORK QUESTIONS...

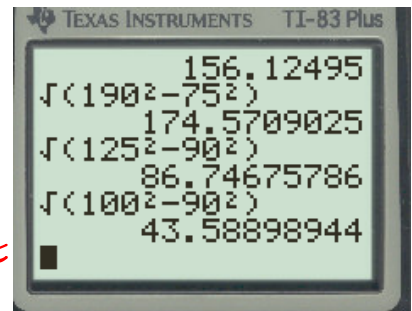
12. John is a surveyor who is asked to measure the height of a hill in Placentia, NL. He is unable to do so directly, so reverts to measuring the slant distance and the horizontal distance of shorter segments as he climbs up.

- a) How high is the hill?
- b) Why would John measure the hill in this manner?



$$\sqrt{w^2} = \sqrt{200^2 - 125^2}$$

$$w = 156.1$$

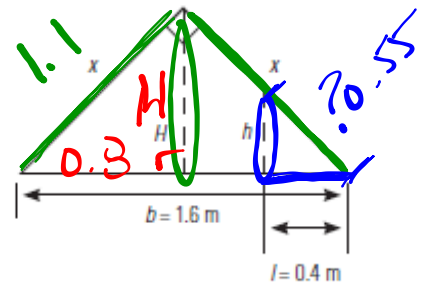


a) - height =

	$156.1 + 174.6 + 86.7$
	$+ 43.6$
	461 m

7. Suki is building an A-frame doghouse in her backyard. There will be a 90° angle at the vertex, and the base of the front will be 1.6 m wide. Answer to the nearest tenth of a metre.

- a) What will the lengths of the sloping roof pieces be?
- b) How high will the doghouse be at its peak? (Hint: H = height.)
- c) At 0.4 m in from the base, how high will the doghouse be?
- d) Would this be a suitable doghouse for a large dog? Why or why not?



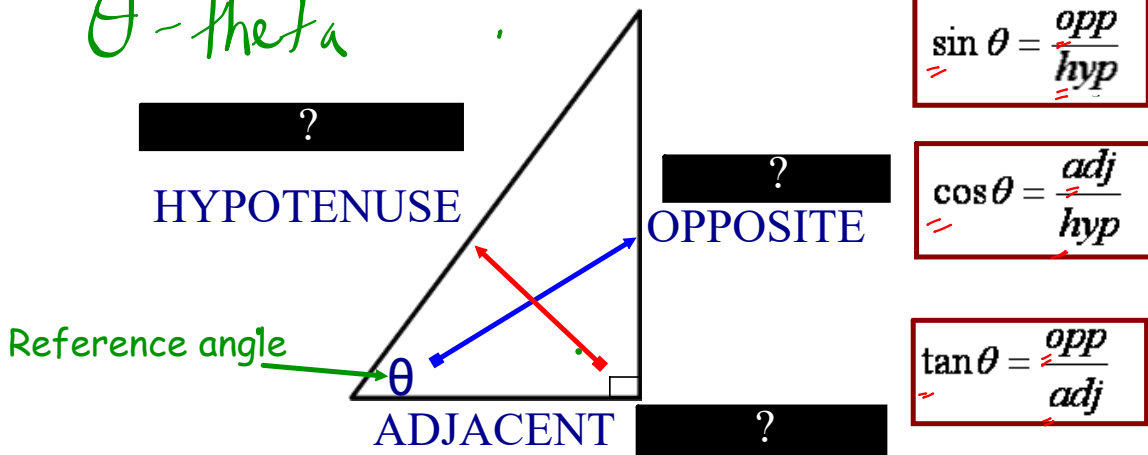
a) $x^2 + x^2 = 1.6^2$
 $2x^2 = 1.6^2$
 $x^2 = 1.28$
 $x = 1.1\text{m}$

b) $\sqrt{H^2} = \sqrt{1.1^2 - 0.8^2}$
 $(H = 0.8\text{ m})$
 c) $\sqrt{h^2} = \sqrt{0.55^2 - 0.4^2}$
 $(h = 0.4\text{ m})$

Trigonometric Ratios (DRG)

*** Must have calculator in DEGREE mode ***

θ - theta



"These are called the *Primary Trig Ratios*"

REMEMBER: "SOH CAH TOA"

GREEK ALPHABET

A α	alpha	N ν	nu
B β	beta	Ξ ξ	ksi
Γ γ	gamma	Ο ο	omicron
Δ δ	delta	Π π	pi
E ε	epsilon	Ρ ρ	rho
Z ζ	zeta	Σ σς	sigma
H η	eta	T τ	tau
Θ θ	theta	Υ υ	upsilon
I ι	iota	Φ φ	phi
K κ	kappa	X χ	chi
Λ λ	lambda	Ψ ψ	psi
M μ	mu	Ω ω	omega

Greek alphabet chart © by de Traci Regula; licensed to About.com

Trigonometric Ratios

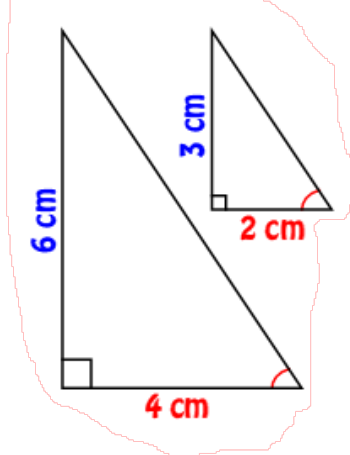
- Each angle has a specific trigonometric ratio

ie. $\tan 56^\circ = 1.4826$ (ALWAYS carry 4 decimal places!!)

$\cos 50^\circ = 0.6428$

These ratios will be found using a scientific calculator

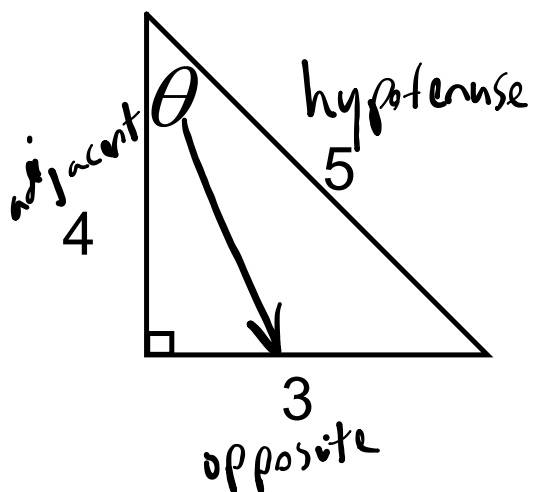
Look at these two triangles...they are similar.



Even though these triangles are different sizes, the ratios of their sides would be equal.

This confirms that as long as the angles are the same measure, the trigonometric ratios will be the same.

State all 3 Primary Trig ratios... SOH CAH TOA

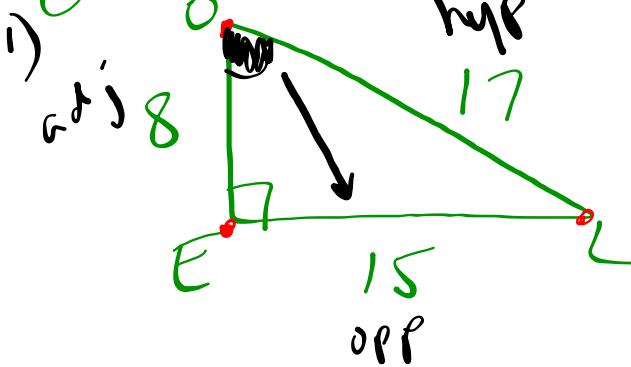


$$\sin \theta = \frac{3}{5}$$

$$\cos \theta = \frac{4}{5}$$

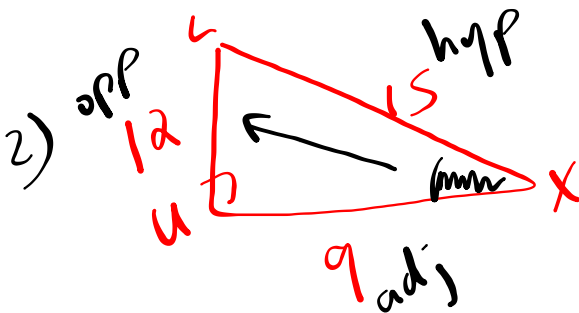
$$\tan \theta = \frac{3}{4}$$

Your Turn...



SOH CAH TOA

$$\cos \theta = \frac{8}{17}$$

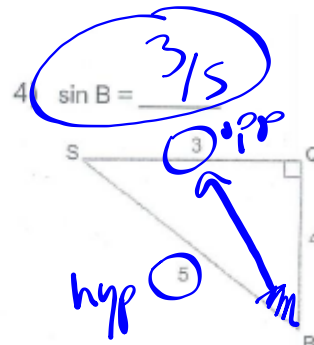
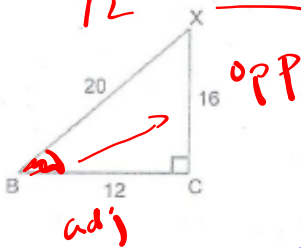


$$\cos X = \frac{9}{15}$$

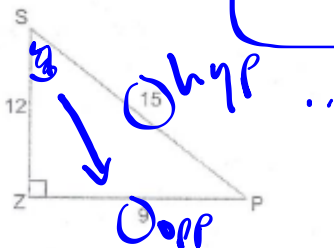
$$\cos X = \frac{3}{5}$$

Reduce

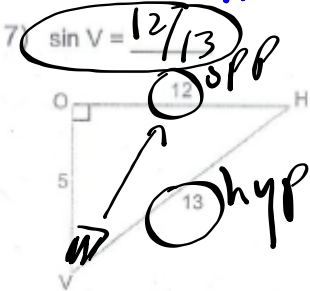
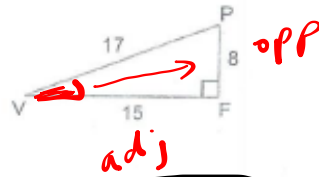
3) $\tan B = \frac{16}{12}$ $\tan B = \frac{4}{3}$



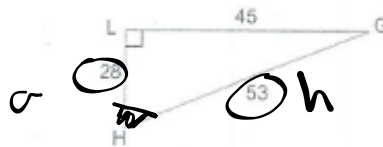
5) $\sin S = \frac{9}{15}$ $\sin S = \frac{3}{5}$



6) $\tan V = \frac{8}{15}$

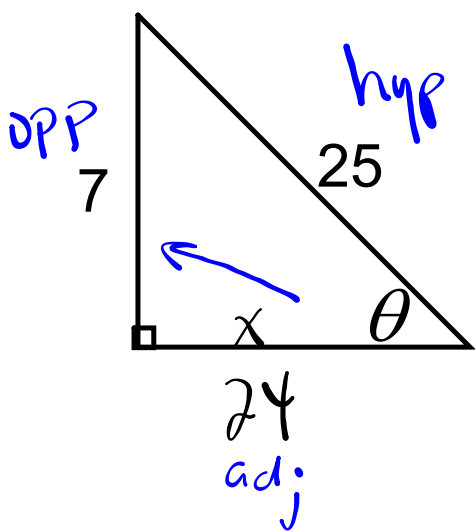


8) $\cos H = \frac{28}{53}$



CAH

Determine the missing side then list trig ratios...



$$\sqrt{x^2} = \sqrt{25^2 - 7^2}$$


$$x = 24$$

SOH
 $\sin \theta = \frac{7}{25}$

CAH
 $\cos \theta = \frac{24}{25}$

TOA
 $\tan \theta = \frac{7}{24}$

HOMEWORK...

 Worksheet - Pythagorus and Primary Trig Ratios.pdf

Attachments

Worksheet - Identifying Primary Trig ratios.pdf

Worksheet - Pythagorus and Primary Trig Ratios.pdf