

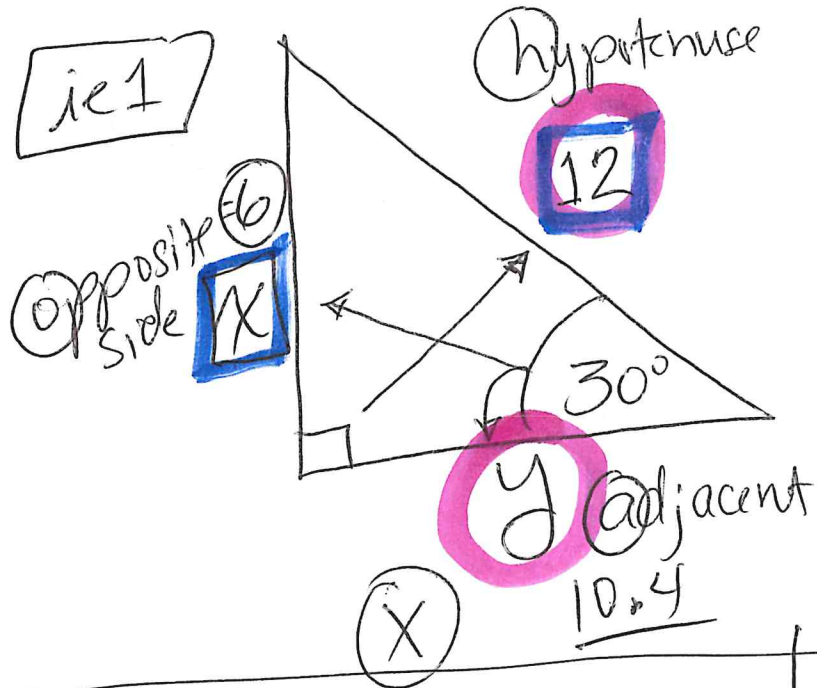
1/7/2022

Lesson 32

Sine,
Cosine,
Tangent

Put all together!

ie 1



SOH
CAH
TOA

Legs
FORMULA

x

y

$$\frac{\sin 30^\circ}{1} = \frac{o}{H} = \frac{x}{12}$$

$$\frac{0.5}{1} = \frac{x}{12}$$

we
LOW
math

$$6 = x$$

$$\frac{\cos 30^\circ}{1} = \frac{A}{H} = \frac{y}{12}$$

multiply

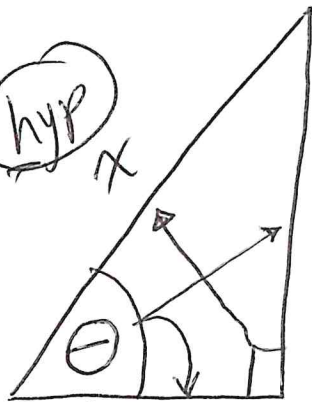
$$\frac{0.866}{1} = \frac{y}{12}$$

multiply

$$10.4 = y$$

ie 2

hyp x



5
opp

29° 9
adj

$\theta = \text{theta}$
(unknown angle)

SOH CAH TOA

θ

x

$$\tan \theta = \frac{O}{A} = \frac{5}{9}$$

$$\tan \theta = 5 \div 9 = .5555$$

$$\tan \theta = 29^\circ$$

use
shut

~~calc~~

$$2 \text{nd} (\tan .5555) \approx 29^\circ$$

$$\tan^{-1}(.5555)$$

* pythagorean theorem

$$a^2 + b^2 = c^2$$

$$9^2 + 5^2 = x^2$$

$$\frac{\sin 29^\circ}{1} = \frac{O}{H} = \frac{5}{x}$$

$$\frac{\cos 29^\circ}{1} = \frac{A}{H} = \frac{9}{x}$$

Pythagorean Theorem

$$a^2 + b^2 = c^2$$

$$9^2 + 5^2 = X^2$$

$$81 + 25 = X^2$$

$$\sqrt{106} = \sqrt{X^2}$$

$X = 10.3$

Sine

$$\frac{\sin 29^\circ}{1} = \frac{5}{X}$$

~~$\frac{0.4848}{1} = \frac{5}{X}$~~

$$\rightarrow 0.4848X = \frac{5}{0.4848}$$

$X \approx 10.3$

Cosine

$$\frac{\cos 29^\circ}{1} = \frac{9}{X}$$

~~$\frac{0.8746}{1} = \frac{9}{X}$~~

$$\rightarrow 0.8746X = 9$$

$X \approx 10.3$