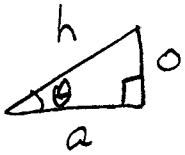
Geometry Tuesday 11-6-12 Class Notes

SOH CAH TOA

theta: θ (Greek Letter)



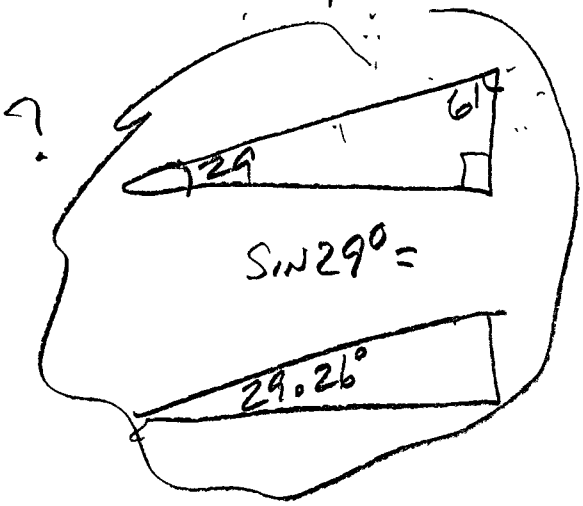
$\sin = \frac{o}{H}$ $\cos = \frac{a}{H}$ $\tan = \frac{o}{a}$

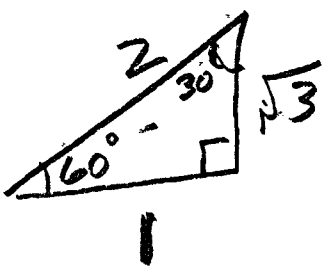
$\sin 30^\circ = \frac{o}{H} = \frac{1}{2}$

$\cos 30^\circ = \frac{a}{H} = \frac{\sqrt{3}}{2}$

$\tan 30^\circ = \frac{o}{a} = \frac{1}{\sqrt{3}}$

$\frac{1}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \boxed{\frac{\sqrt{3}}{3}}$





$\sin 60^\circ = \frac{\sqrt{3}}{2} = \boxed{.8660}$

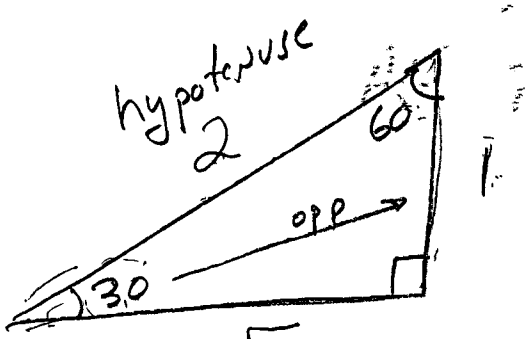
$\cos 60^\circ = \frac{1}{2} = \boxed{.5000}$

$\tan 60^\circ = \frac{\sqrt{3}}{1} = \sqrt{3} = \boxed{1.7321}$

$\sin\theta$ = decimal

$\cos\theta = .3256$

$\cos^{-1}(.3256) = 71^\circ$



SOH CAH TOA

30° side opp. / hypotenuse = $\frac{1}{2}$ = 0.5000

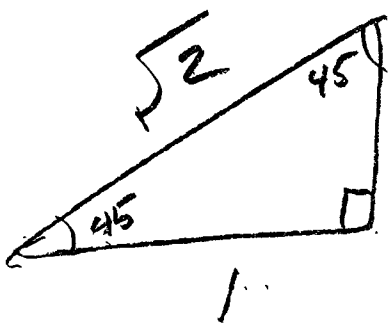
$\sin 30^\circ = \frac{O}{H} = \frac{1}{2} = 0.5000$

$\sin 29^\circ = \frac{O}{H} =$ .4848

$\sin 60^\circ = \frac{\sqrt{3}}{2} \approx .8660$

$\cos 30^\circ = \frac{a}{H} = \frac{\sqrt{3}}{2} = .8660$

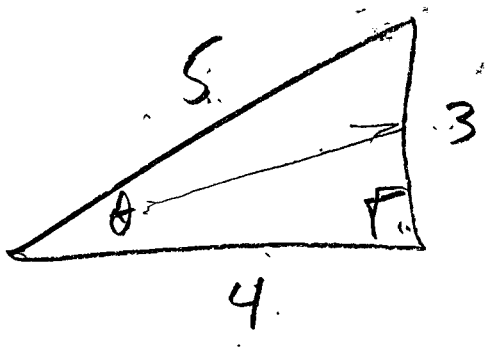
$\tan 30^\circ = \frac{O}{a} = \frac{1}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{\sqrt{3}}{3}$



$\sin 45^\circ = \frac{1}{\sqrt{2}} = \frac{\sqrt{2}}{2} \approx .7071$

$\cos 45^\circ = \frac{1}{\sqrt{2}} = .7071$

$\tan 45 = \frac{1}{1} = 1$



GREEK LETTER

θ = theta

$\sin\theta = \frac{3}{5} = .6$ | $\sin^{-1}(.6) = 37^\circ$

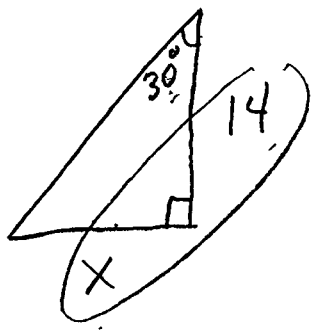
$\cos\theta = \frac{4}{5} = .8$ | $\cos^{-1}(.8) = 37^\circ$

$\tan\theta = \frac{3}{4} = .75$ | $\tan^{-1}(.75) = 37^\circ$

↑ functions

Inverse function (f^{-1})

(25)



SOH CAH TOA

$\tan 30^\circ = \frac{X}{14}$

$14 \tan 30^\circ = X$

$14(.5774) = X$

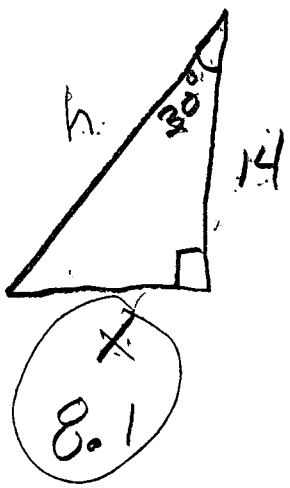
$8.0836 = X$

$8.1 = X$

$\therefore$ hyp = 16.2

.5774
× 14
23096
5774
8.0836

(25)



$\tan 30^\circ = \frac{x}{14}$

$14 \tan 30^\circ = x$

$14(.5774) = x$

$8.0836 = x$

$\boxed{8.1 = x}$

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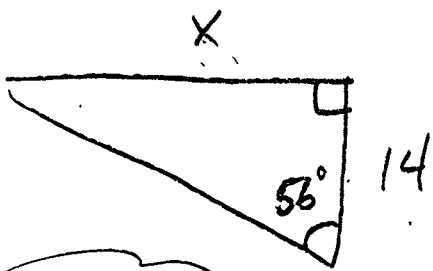
(26)



$\tan 56^\circ = \frac{x}{14}$

$14 \tan 56 = x$

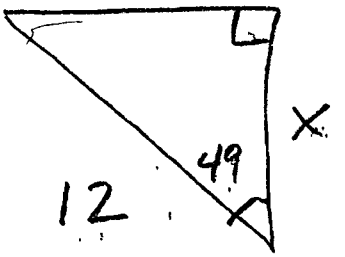
$14(1.4826) = x$

$20.7564 = x$

$\boxed{20.8 = x}$

$$\begin{array}{r} 1.4826 \\ \times \quad 14 \\ \hline 5\ 9\ 3\ 0\ 4 \\ 1\ 4\ 8\ 2\ 6 \\ \hline 20.7564 \end{array}$$

(30)



SOH CAH TOA

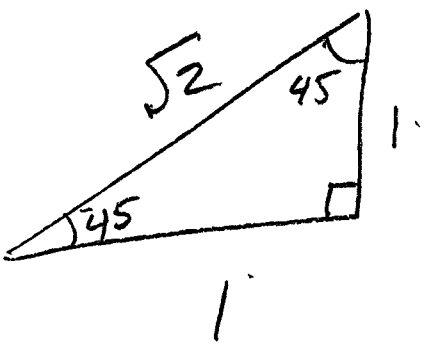
$\cos 49^\circ = \frac{x}{12}$

$12(.6561) = x$

$7.8732 = x$

$7.9 = x$

$\tan^{-1}(1.4826) = 56^\circ$

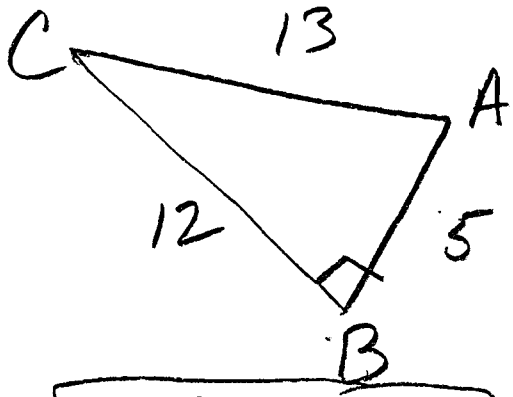


$\sin 45^\circ = \frac{1}{\sqrt{2}} = \frac{\sqrt{2}}{2}$

$\cos 45^\circ = \frac{1}{\sqrt{2}} = \frac{\sqrt{2}}{2}$

$\tan 45^\circ = \frac{1}{1} = 1$

(8)



$\cos C = ?$

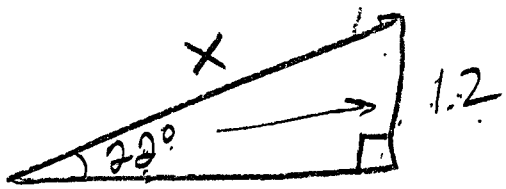
$\cos C = \frac{12}{13}$

CALCULATOR

$\approx .9230$

$\cos^{-1}(.9230) \approx 23^\circ$

(32)



SOH CAH TOA

$$x \sin 22^\circ = \frac{12}{x} \cdot x$$

$$\frac{x \sin 22}{\sin 22} = \frac{12}{\sin 22}$$

$$x = \frac{12}{(.3746)}$$

$$.3746 \overline{)12.0000.00}$$

000032.0

-11238

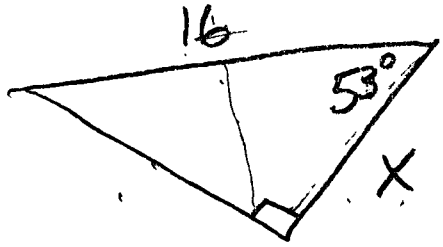
7620

-7492

1280

$$x \cong 32.0$$

(40)



~~SOH~~ (CAH) ~~TOA~~

$$16\cos 53^\circ = \frac{X}{16} \cdot 16$$

$$16(.6018) = X$$

$$\begin{array}{r} .6018 \\ \times\ 16 \\ \hline 36108 \\ 6018 \\ \hline 9.6288 \end{array}$$

$$9.6288 = X$$

$$\boxed{9.6 = X}$$