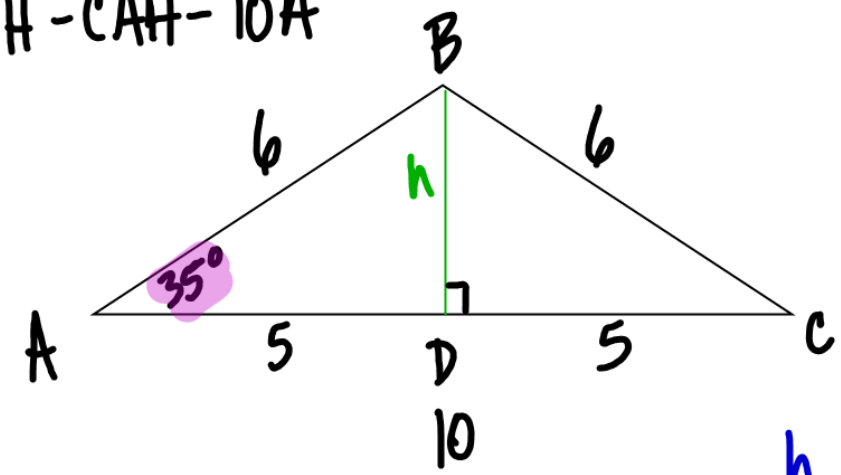
SOH-CAH-TOA



$\text{Area } \Delta = \frac{1}{2}bh$

$A = \frac{1}{2}(10)(3.44)$

$A = 17.2 \text{ units}^2$

$A = 17.5$

$A = \frac{1}{2}(10)(3.31)$

16.5

$\sin 35 = \frac{h}{6}$

$6 \cdot .5736 = \frac{h}{6} \cdot 6$

$3.44 = h$

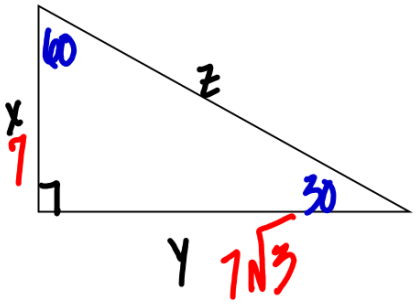
$\tan 35 = \frac{h}{5}$

$5 \cdot .7002 = \frac{h}{5} \cdot 5$

$3.5 = h$

longleg = shortleg$\sqrt{3}$

hypotenuse = 2shortleg



$\tan 30 = \frac{7}{y}$

$y \cdot .5774 = \frac{7}{y} \cdot y$

$\frac{.5774y}{.5774} = \frac{7}{.5774}$

$y = 12.1233$

$\cos 60 = \frac{7}{z}$

$.5 = \frac{7}{z}$

$\sin 30 = \frac{7}{z}$

$.5 = \frac{7}{z}$

$z = 14$

$\sin X$

$\sin 30 = \cos 60$

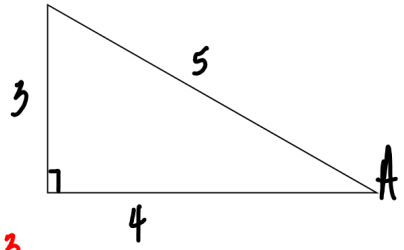
$$\tan\theta = \frac{\sin\theta}{\cos\theta}$$

SOH-CAH-TOA

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

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

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



$$\frac{\sin A}{\cos A} \quad \frac{\frac{3}{5}}{\frac{4}{5}} = \frac{3}{4}$$

$$\sin^2 A + \cos^2 A = 1$$

$$\left(\frac{3}{5}\right)^2 + \left(\frac{4}{5}\right)^2 = 1$$

$$\frac{9}{25} + \frac{16}{25} = 1$$

$$\sin^2\theta + \cos^2\theta = 1$$

$-\cos^2\theta \qquad -\cos^2\theta$

$$\sin^2\theta = 1 - \cos^2\theta$$

$$\cos^2\theta = 1 - \sin^2\theta$$

$x + y = 1$

$-y \quad -y$

$x = 1 - y$

$$\tan\theta \cdot \cos\theta = \frac{\sin\theta}{\cos\theta}$$

$$= \frac{\cos\theta}{\sin\theta}$$

$\tan\theta$	Reciprocal $\cot\theta$ cotangent
$\frac{\sin\theta}{\cos\theta}$	$\frac{\cos\theta}{\sin\theta}$

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

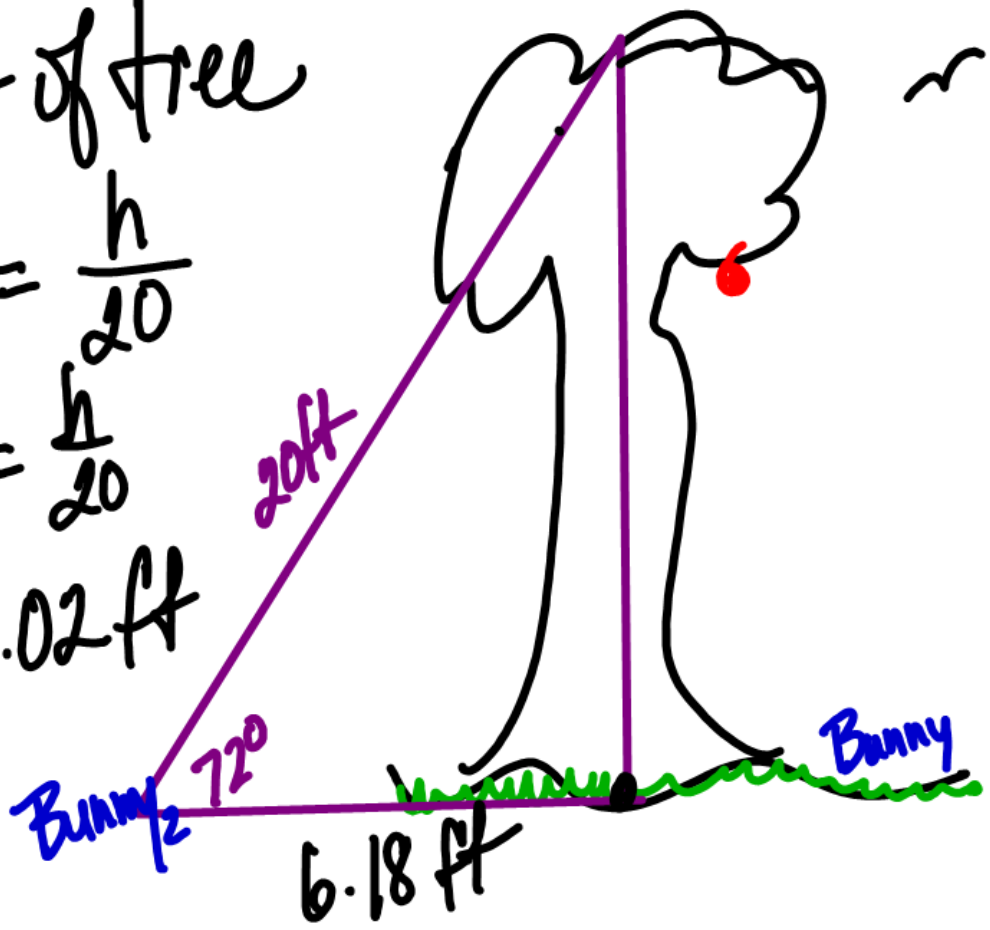
$\cos\theta$	$\sec\theta$ secant
$\cos\theta = \frac{4}{5}$	$\sec\theta = \frac{5}{4}$

height of tree

$\sin 72 = \frac{h}{20}$

$.9511 = \frac{h}{20}$

$h = 19.02$ ft



$\cos 72 = \frac{x}{20}$

$.3090 = \frac{x}{20}$

6.18 ft