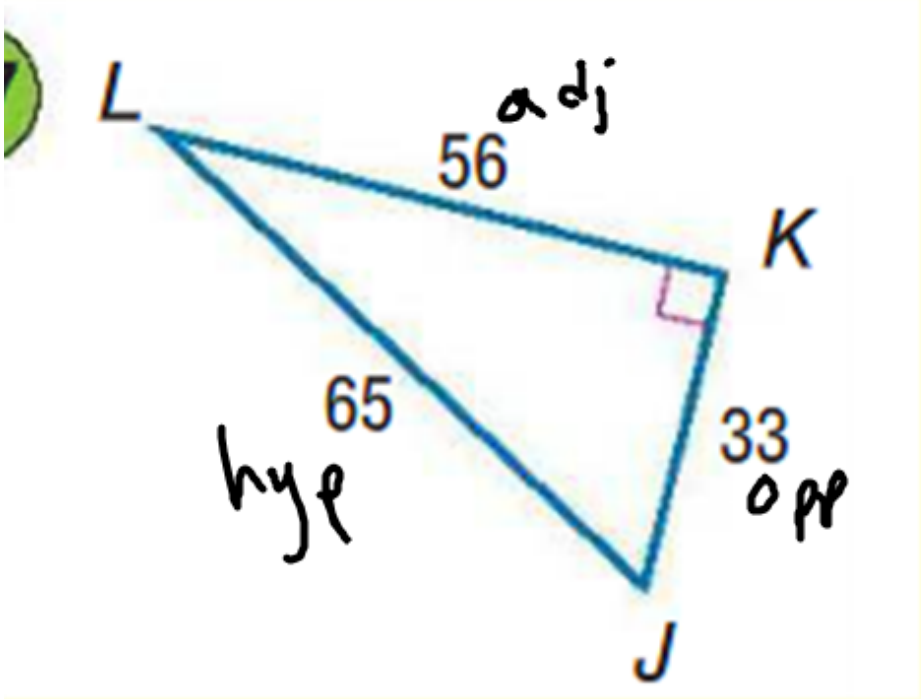
Q's from Page 567?

Find sin *J*, cos *J*, tan *J*, sin *L*, cos *L*, and tan *L*. Express each ratio as a fraction and as a decimal to the nearest hundredth.



$\sin J = \frac{56}{65} \approx .86$

$\cos J = \frac{33}{65} \approx .51$

$\tan J = \frac{56}{33} \approx 1.70$

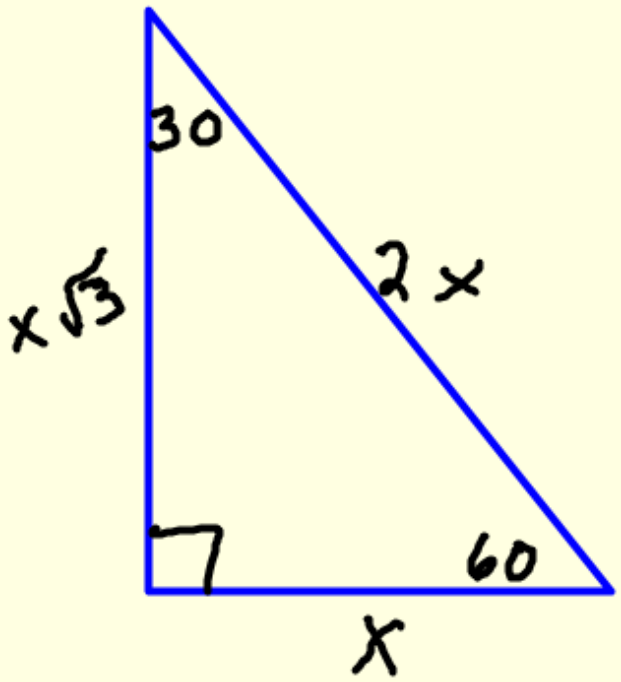
$\sin L = \frac{33}{65} \approx .51$

$\cos L = \frac{56}{65} \approx .86$

$\tan L = \frac{33}{56} \approx .59$

Trig ratios in Special Right Triangles

30-60-90



$\sin 30 = \frac{1x}{2x} = \frac{1}{2}$

$\cos 30 = \frac{x\sqrt{3}}{2x} = \frac{\sqrt{3}}{2}$

$\tan 30 = \frac{x}{x\sqrt{3}} = \frac{1}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{\sqrt{3}}{3}$

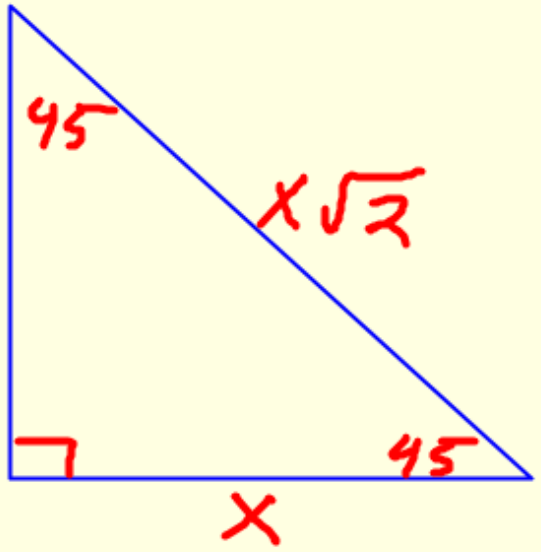
$\sin 60° = \frac{\sqrt{3}}{2}$

$\cos 60 = \frac{1}{2}$

$\tan 60 = \frac{x\sqrt{3}}{x} = \sqrt{3}$

45-45-90

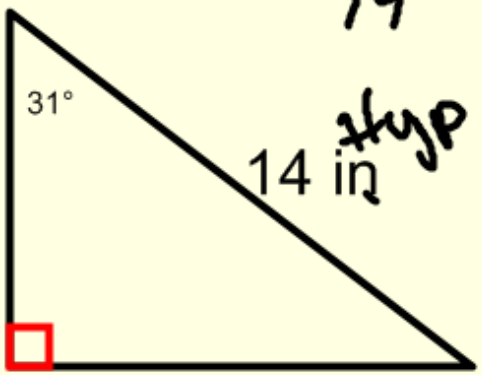
$\sin 45 = \frac{x}{x\sqrt{2}} = \frac{1}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{\sqrt{2}}{2}$ X



$\cos 45 = \frac{\sqrt{2}}{2}$

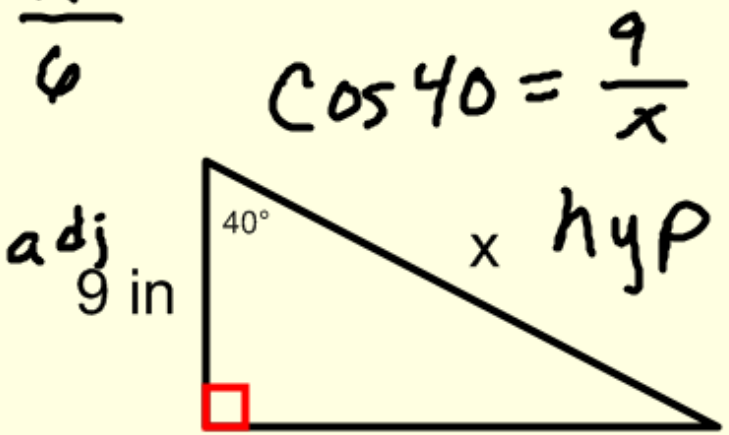
$\tan 45 = \frac{x}{x} = 1$

Determine if you would use sine, cosine, or tangent.

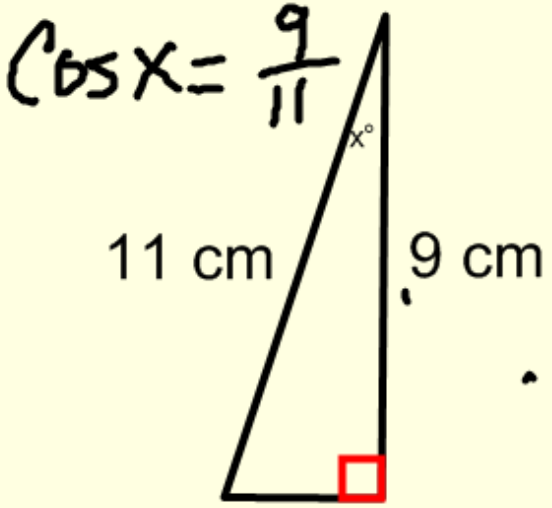


sine

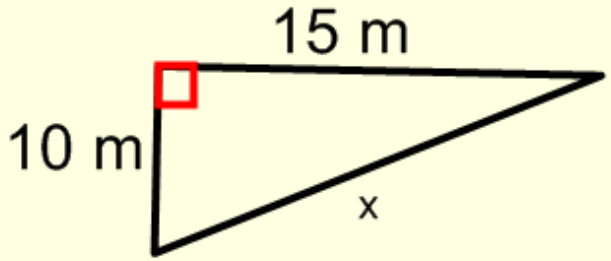
tangent



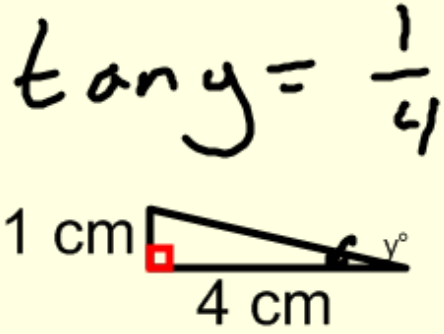
cosine



cosine



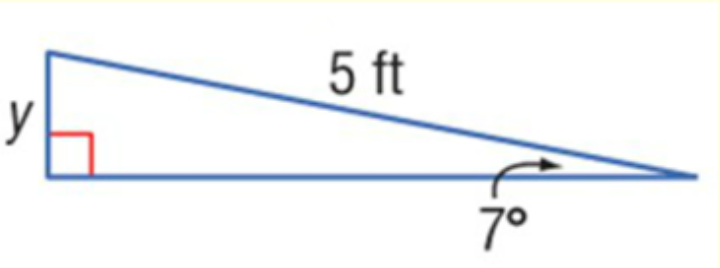
Pythagorean Theorem

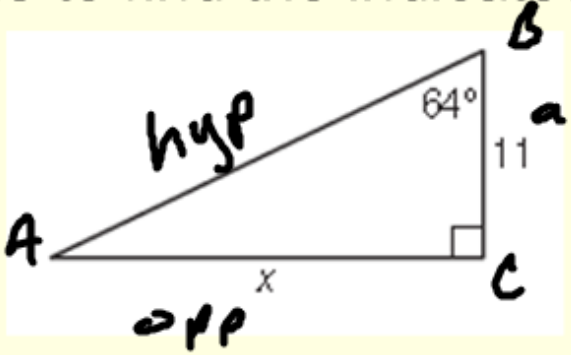


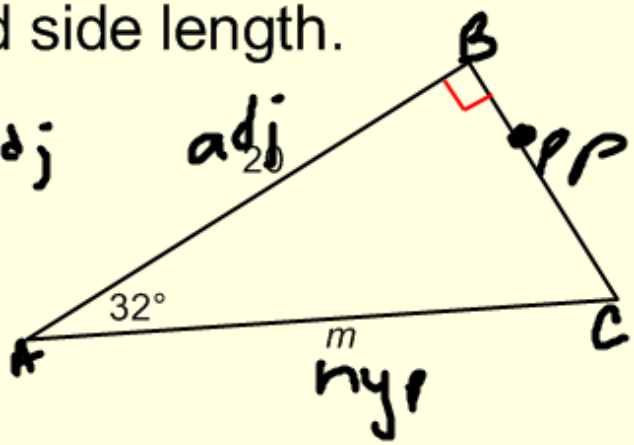
tangent

Nearest tenth

Use Trigonometric functions to find the indicated side length.







$5 \cdot \sin 7 = \frac{y}{5} \cdot 5$

$5 \sin 7 = y$

$.6 = y$

$\tan 64 = \frac{x}{11} \cdot 11$

$11 \tan 64 = x$

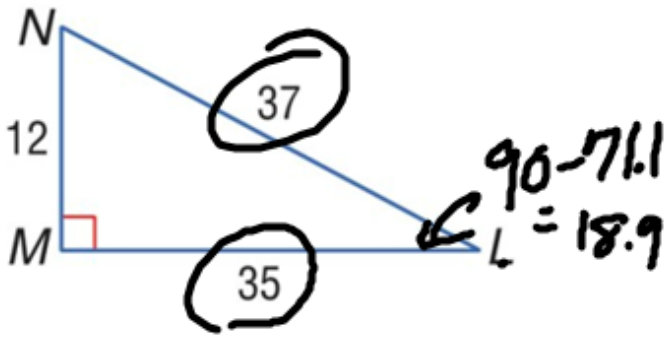
$22.6 = x$

$\cos 32 = \frac{20}{m}$

$m = \frac{20}{\cos 32}$

$m = 23.6$

Use Inverse Trig Ratios to find Angle Measurements



Inverse Sine $\sin^{-1}$

Inverse Cosine $\cos^{-1}$

$N = \tan^{-1}\frac{35}{12}$

$N = 71.1°$

$N = \sin^{-1}\frac{35}{37}$

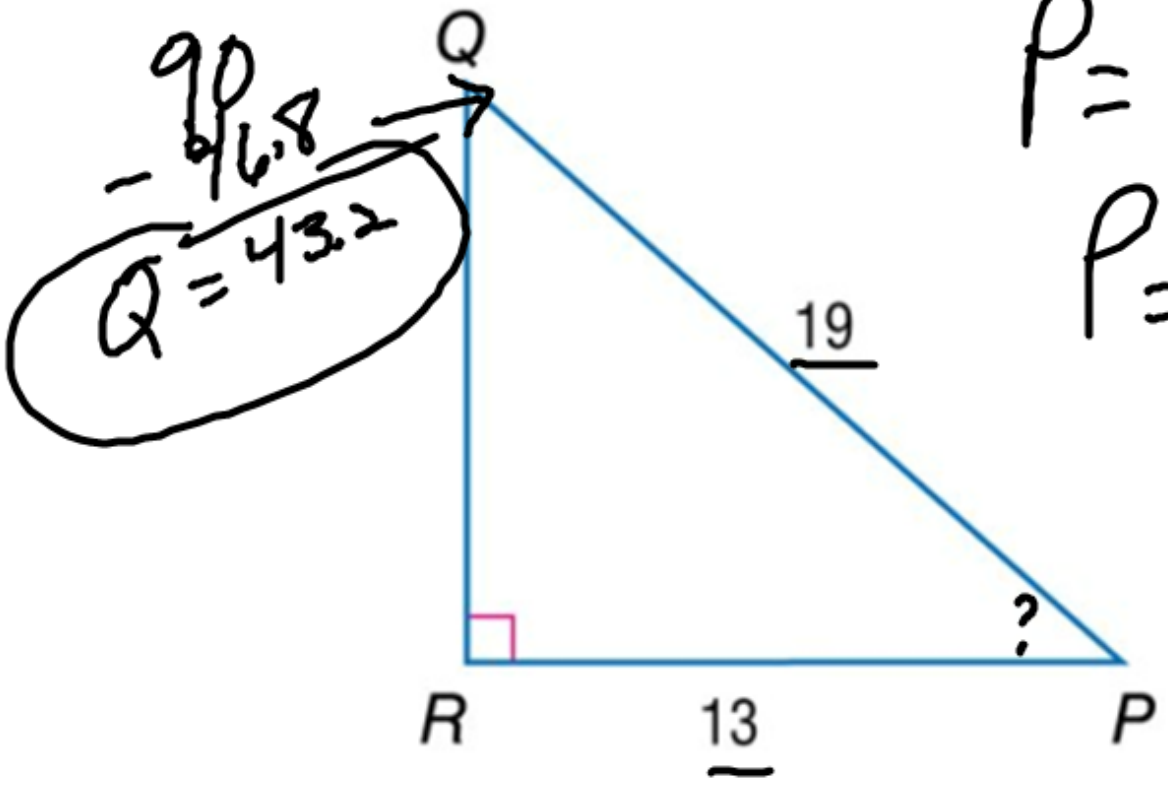
$N = 71.1°$

Inverse Tangent $\tan^{-1}$

$L = \cos^{-1}\frac{35}{37} = 18.9°$

EXAMPLE 4 Find Angle Measures Using Inverse Trigonometric Ratios

Use a calculator to find the measure of $\angle P$ to the nearest tenth.



$P = \cos^{-1} \frac{13}{19}$

$P = 46.8$

~~90~~ -46.8

$Q = 43.2$