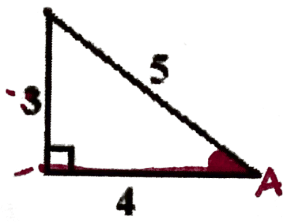
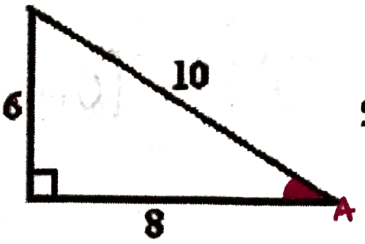
Trig Notes



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

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

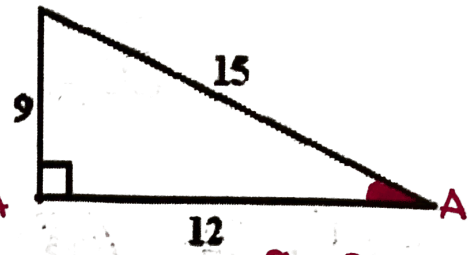
$\tan A = \frac{3}{4}$



$\sin A = \frac{6}{10} = \frac{3}{5}$

$\cos A = \frac{8}{10} = \frac{4}{5}$

$\tan A = \frac{6}{8} = \frac{3}{4}$



$\sin A = \frac{9}{15} = \frac{3}{5}$

$\cos A = \frac{12}{15} = \frac{4}{5}$

$\tan A = \frac{9}{12} = \frac{3}{4}$

θ = theta a missing angle measure

β α

$\frac{opp}{hyp}$ = Sin θ → Sine

$\frac{adj}{hyp}$ = Cos θ → Cosine

$\frac{opp}{adj}$ = Tan θ → Tangent

SOH

CAH

TOA

$\frac{hyp}{opp} = \frac{1}{\sin\theta} = \csc\theta$ → cosecant

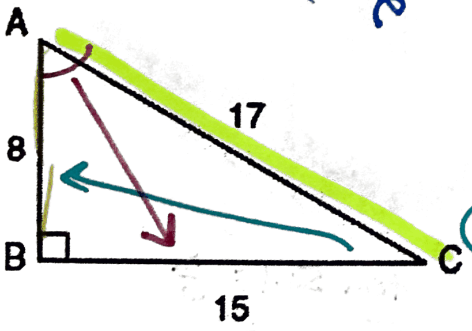
$\frac{hyp}{adj} = \frac{1}{\cos\theta} = \sec\theta$ → secant

$\frac{adj}{opp} = \frac{1}{\tan\theta} = \cot\theta$ → cotangent

SOH — Sine, opposite, hypotenuse

CAH — Cosine, adjacent, hypotenuse

TOA — Tangent, opposite, adjacent



$\sin A = \frac{15}{17}$

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

$\tan A = \frac{15}{8}$

$\csc A = \frac{17}{15}$

$\sec A = \frac{17}{8}$

$\cot A = \frac{8}{15}$

$\sin C = \frac{8}{17}$

$\cos C = \frac{15}{17}$

$\tan C = \frac{8}{15}$

$\csc C = \frac{17}{8}$

$\sec C = \frac{17}{15}$

$\cot C = \frac{15}{8}$

Special Right Triangles

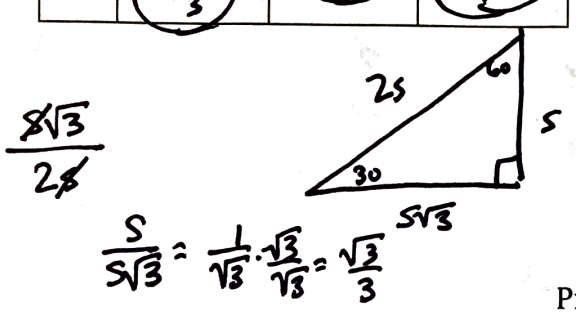
SOH CAH TOA

	30°	45°	60°
sin	$\frac{1}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{3}}{2}$
cos	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{1}{2}$
tan	$\frac{\sqrt{3}}{3}$	1	$\sqrt{3}$

1. Complete the chart. **Must use fractions!**

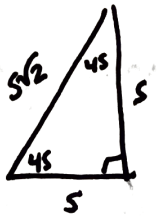
2. What is special about the relationship between the sine of an angle and the cosine of its complement? Use the chart to explain.

Remember; Complementary angles are two angles that add up to 90 degrees. For example, the complement of angle of 60 degrees is an angle whose measure is 30 degrees.



$\frac{s\sqrt{3}}{2s}$

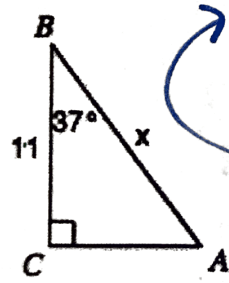
$\frac{s}{s\sqrt{3}} = \frac{1}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{\sqrt{3}}{3}$



Practice Problems

MAKE SURE YOUR CALCULATOR IS IN DEGREE MODE

1.



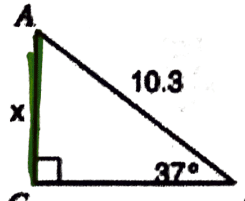
$X = \frac{11}{\cos 37}$

13.77

$X \cdot \cos 37 = \frac{11}{X} \cdot \frac{X}{1}$

$\frac{X \cos 37}{\cos 37} = \frac{11}{\cos 37}$

2.

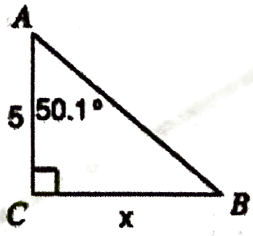


$10.3 \sin 37 = \frac{x}{10.3} \cdot \frac{10.3}{1}$

$10.3 \cdot \sin 37 = x$

6.2

3.

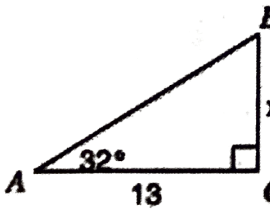


$\tan 50.1 = \frac{x}{5}$

$5 \cdot \tan 50.1 = x$

$5.98 = x$

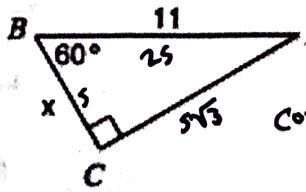
4.



$\tan 32 = \frac{x}{13}$

8.12

5.



$\cos 60 = \frac{x}{11}$

5.5