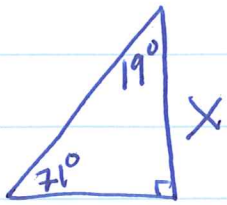
8-4 Trigonometry

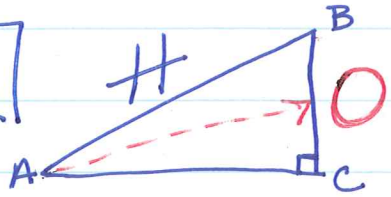
Find the missing side:



* not a special right
* not enough info for Pythagorean Thm.

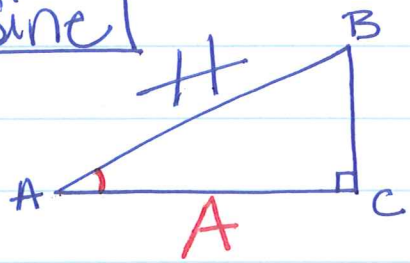
Trigonometric Ratios: ratios of the lengths of the sides of a right △.

Sine



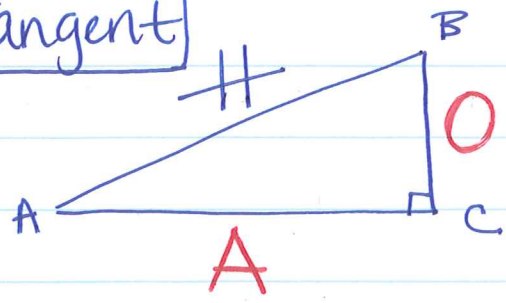
$$\sin A = \frac{\text{opposite}}{\text{hypotenuse}}$$

Cosine



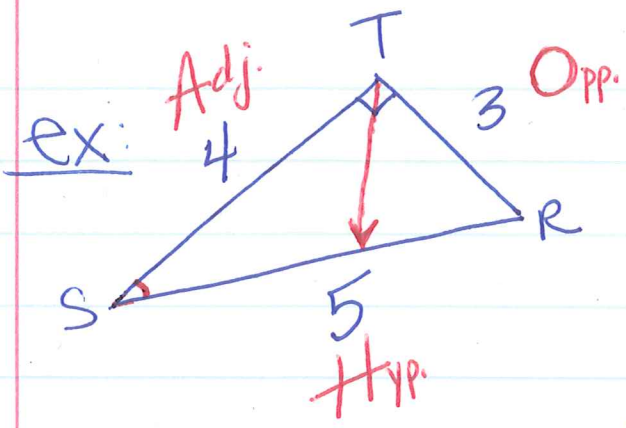
$$\cos A = \frac{\text{adjacent}}{\text{hypotenuse}}$$

Tangent



$$\tan A = \frac{\text{opposite}}{\text{adjacent}}$$

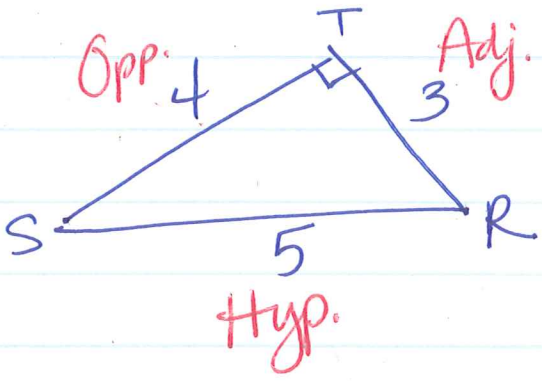
ex:



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

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

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

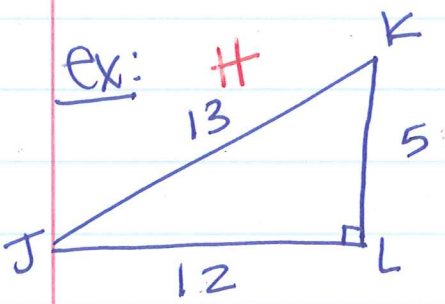


$\sin R = \frac{4}{5}$

$\cos R = \frac{3}{5}$

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

ex:



$\sin J = \frac{5}{13}$ $\quad \sin K = \frac{12}{13}$

$\cos J = \frac{12}{13}$ $\quad \cos K = \frac{5}{13}$

$\tan J = \frac{5}{12}$ $\quad \tan K = \frac{12}{5}$

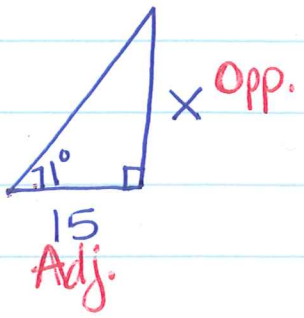
ex: Use calculator

* degree Mode *

$\cos 39° = .7771$ $\quad \tan 56° = 1.4826$

$\sin 67° = .9205$ $\quad \cos 89° = .0175$

ex: Find the missing side.



$\tan 71° = \frac{x}{15}$

$15 \cdot (\tan 71) = \frac{x}{15} \cdot 15$

~~$43.56 = x$~~

$43.5632 = x$