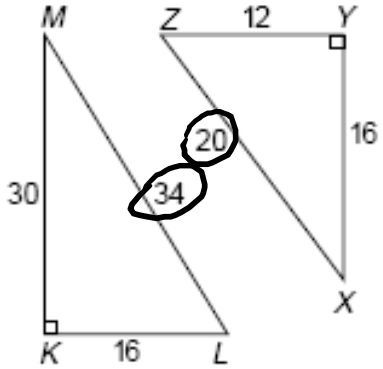
Find the indicated ratio as a fraction

1) $\sin M$ $\frac{16}{34} = \frac{8}{17}$

2) $\cos Z$ $\frac{12}{20} = \frac{3}{5}$

3) $\tan L$ $\frac{30}{16} = \frac{15}{8}$



Find x or y.

4) $8 \cdot \cos 36 = \frac{y}{8} \cdot 8$

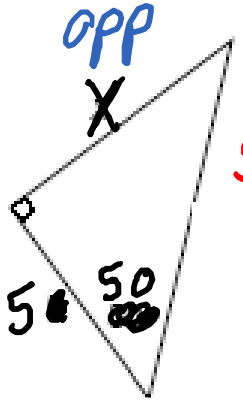
$8\cos 36 = y$

$y = 6.5$

5) $5 \cdot \tan 50 = \frac{x}{5} \cdot 5$

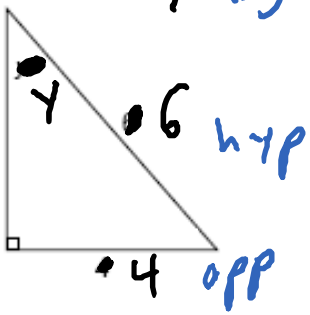
$5\tan 50 = x$

$x = 6.0$



6) $\sin y = \frac{4}{6}$

$y = 41.8$

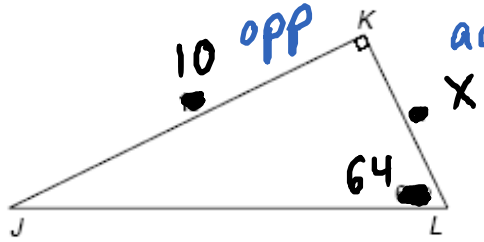


7) $x \cdot \tan 64 = \frac{10}{x} \cdot x$

$x\tan 64 = 10$

$\frac{x\tan 64}{\tan 64} = \frac{10}{\tan 64}$

$x = \frac{10}{\tan 64} = 4.9$



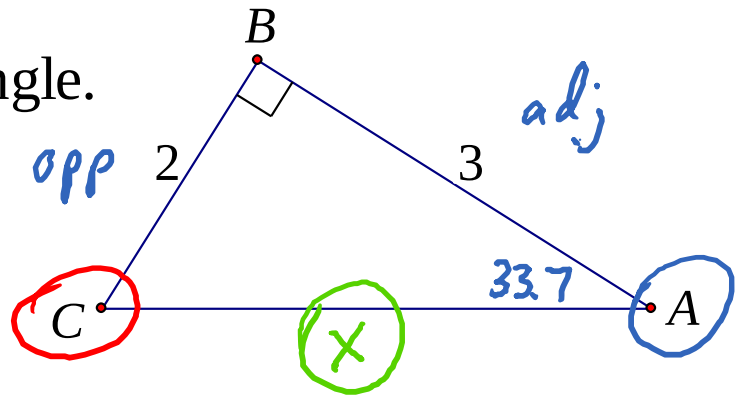
Solving Triangles

Things to Remember

- If you're missing an angle, add up to $180°$
- If you're missing a side, $a^2 + b^2 = c^2$
- When relating sides and angles, use SOH CAH TOA

"Solve the triangle" means find measures of all the sides and angles

Ex. Solve the triangle.



$AC =$ 3.6

$m\angle A =$ 33.7

$m\angle C =$ 56.3

$\tan A = \frac{2}{3}$

$A = 33.7$

$90 + 33.7 + C = 180$

$C = 56.3$

$a^2 + b^2 = c^2$

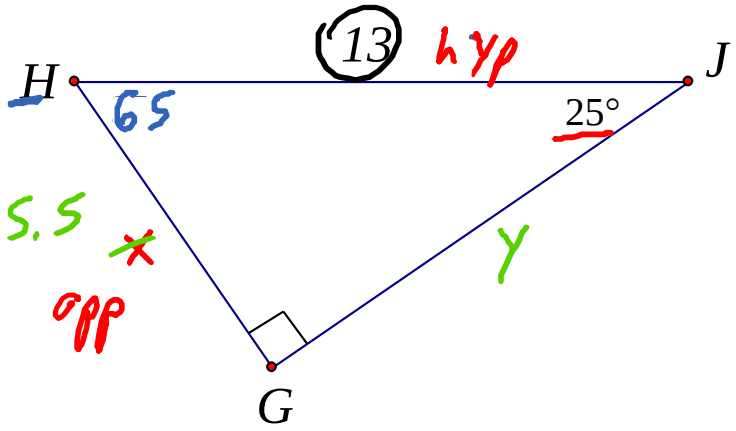
$2^2 + 3^2 = x^2$

$4 + 9 = x^2$

$\sqrt{13} = \sqrt{x^2}$

$x = 3.6$

Ex. Solve the triangle.



$GH =$ 5.5

$GJ =$ 11.8

$m\angle H =$ 65

$25 + 90 + H = 180$

$H = 65$

$13 \cdot \sin 25 = \frac{x}{13} \cdot 13$

$13 \sin 25 = x$

$x = 5.5$

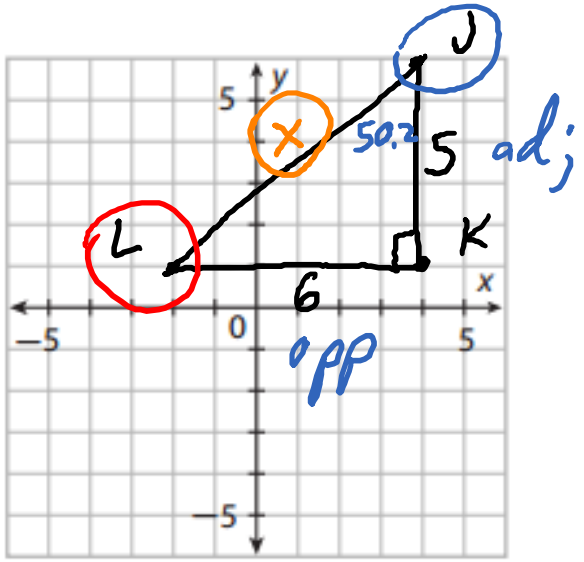
$a^2 + b^2 = c^2$

$5.5^2 + y^2 = 13^2$

$30.2 + y^2 = 169$

$\sqrt{y^2} = \sqrt{138.8}$ → $y = 11.8$

ΔJKL has vertices $J(4,6)$, $K(4,1)$, and $L(-2,1)$. Graph the triangle and find all side lengths and angle measures.



adj; opp

$m\angle J =$ 50.2

$m\angle K =$ 90

$m\angle L =$ 39.5

$JK =$ 5

$KL =$ 6

$LJ =$ 7.8

$\tan J = \frac{6}{5}$

$J = 50.2$

$50.2 + 90 + L = 180$

$L = 39.8$

$a^2 + b^2 = c^2$

$6^2 + 5^2 = x^2$

$36 + 25 = x^2$

$\sqrt{61} = \sqrt{x^2}$

$x = 7.8$