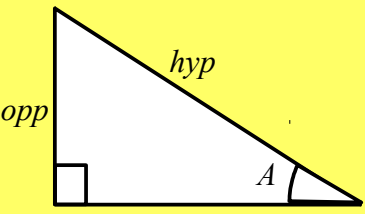
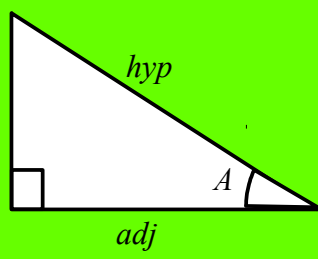
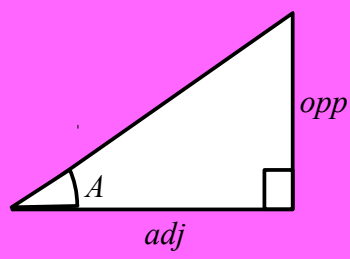


SohCahToa

Sine	Cosine	Tangent
 <p>Sine of angle $A = \frac{\text{Opp}}{\text{Hyp}}$</p>	 <p>Cosine of angle $A = \frac{\text{Adj}}{\text{Hyp}}$</p>	 <p>Tangent of angle $A = \frac{\text{Opp}}{\text{Adj}}$</p>
<p>To find the angle if you know two of the sides...</p>		
<p>Divide opp by hyp and then take the inverse sine</p> $A = \sin^{-1}\left(\frac{\text{opp}}{\text{hyp}}\right)$ <p>Example: opp is 12cm and hyp is 24cm</p> $\frac{\text{opp}}{\text{hyp}} = \frac{12}{24} = 0.5$ $A = \sin^{-1}(0.5) = 30 \text{ degrees}$	<p>Divide adj by hyp and then take the inverse cosine</p> $A = \cos^{-1}\left(\frac{\text{adj}}{\text{hyp}}\right)$ <p>Example: adj is 8cm and hyp is 10cm</p> $\frac{\text{adj}}{\text{hyp}} = \frac{8}{10} = 0.8$ $A = \cos^{-1}(0.8) = 36.8698 \approx 36.9 \text{ deg}$	<p>Divide opp by adj and then take the inverse tangent</p> $A = \tan^{-1}\left(\frac{\text{opp}}{\text{adj}}\right)$ <p>Example: opp is 5cm and adj is 7cm</p> $\frac{\text{opp}}{\text{adj}} = \frac{5}{7} = 0.7143 \dots$ $A = \tan^{-1}(0.7143) \approx 35.5 \text{ deg}$
<p>Multiply a side by the value of the trig function to find another side</p>		
$\text{opp} = \text{hyp} \times \sin(A)$ <p>Example: hyp is 8cm and $A = 40^\circ$</p> $\text{opp} = 8 \times \sin(40)$ $= 8 \times 0.6428 \approx 5.1 \text{ cm}$	$\text{adj} = \text{hyp} \times \cos(A)$ <p>Example: hyp is 10cm and $A = 80^\circ$</p> $\text{opp} = 10 \times \cos(80)$ $= 10 \times 0.1736 \approx 1.7 \text{ cm}$	$\text{opp} = \text{adj} \times \tan(A)$ <p>Example: adj is 15 cm and $A = 60^\circ$</p> $\text{opp} = 15 \times \tan(60)$ $= 15 \times 1.7321 \approx 26.0 \text{ cm}$
<p>Divide a side by the value of the trig function to find another side</p>		
$\text{hyp} = \frac{\text{opp}}{\sin(A)}$ <p>Sin is always less than one, so hyp comes out longer</p> <p>Example: opp = 12cm and $A = 25^\circ$</p> $\frac{12}{\sin(25)} = \frac{12}{0.4226} \approx 28.4 \text{ cm}$	$\text{hyp} = \frac{\text{adj}}{\cos(A)}$ <p>Cos is always less than one, so hyp comes out longer</p> <p>Example: adj = 10cm and $A = 60^\circ$</p> $\frac{10}{\cos(60)} = \frac{10}{0.5} = 20.0 \text{ cm}$	$\text{adj} = \frac{\text{opp}}{\tan(A)}$ <p>Tan is more than 1 for angles larger than 45°, so just depends</p> <p>Example: opp = 12cm and $A = 70^\circ$</p> $\text{adj} = \frac{12}{\tan(70)} = \frac{12}{2.748} \approx 4.4 \text{ cm}$