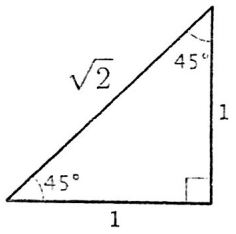
...the 'special' triangles?

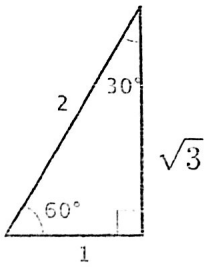
➢ ***Isosceles* Right Triangle:** 45° – 45° – 90°



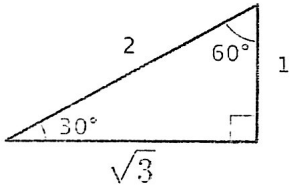
For 45-45-90 remember 1, 1, √2

cos45°= $\frac{1}{\sqrt{2}}\cdot\frac{\sqrt{2}}{\sqrt{2}}=\frac{\sqrt{2}}{2}$ sin45°= $\frac{1}{\sqrt{2}}\cdot\frac{\sqrt{2}}{\sqrt{2}}=\frac{\sqrt{2}}{2}$ tan45°= $\frac{1}{1}=1$

➢ **Equilateral Triangle:** 30° – 60° – 90°



For 30-60-90 remember 1, 2, √3



cos60°= $\frac{1}{2}$ sin60°= $\frac{\sqrt{3}}{2}$ tan60°= $\frac{\sqrt{3}}{1}=\sqrt{3}$

cos30°= $\frac{\sqrt{3}}{2}$ sin30°= $\frac{1}{2}$ tan30°= $\frac{1}{\sqrt{3}}\cdot\frac{\sqrt{3}}{\sqrt{3}}=\frac{\sqrt{3}}{3}$

Remember:

- ➢ The smallest side is opposite the smallest angle
- ➢ The largest side is opposite the largest angle

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You must know the sin, cos, and tan for the special angles. Either:

- Be able to create them from the triangles
  -OR-
- Memorize the table (or how to make it)

	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	$\sqrt{3}$
HONORS			
csc $\frac{1}{\sin}$	2	$\frac{2}{\sqrt{2}}\cdot\frac{\sqrt{2}}{\sqrt{2}}=\frac{2\sqrt{2}}{2}=\sqrt{2}$	$\frac{2}{\sqrt{3}}\cdot\frac{\sqrt{3}}{\sqrt{3}}=\frac{2\sqrt{3}}{3}$
sec $\frac{1}{\cos}$	$\frac{2}{\sqrt{3}}\cdot\frac{\sqrt{3}}{\sqrt{3}}=\frac{2\sqrt{3}}{3}$	$\sqrt{2}$	2
cot $\frac{1}{\tan}$	$\frac{3}{\sqrt{3}}\cdot\frac{\sqrt{3}}{\sqrt{3}}=\frac{3\sqrt{3}}{3}=\sqrt{3}$	1	$\frac{\sqrt{3}}{3}$

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