1.7 EXACT VALUES

ESSENTIAL QUESTION:

How do I calculate the exact value of a given trig function?

sin 30

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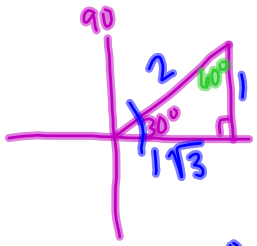
1. sin30°
   cos30°
   tan30°



30	60	90
x	x√3	2x
1	1√3	2

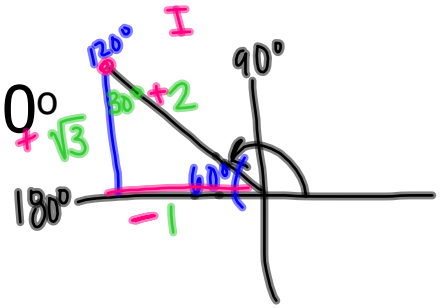
$\sin 30° = \frac{O}{H} = \boxed{\frac{1}{2}}$

$\tan 30 = \frac{O}{A} = \boxed{\frac{1}{\sqrt{3}}}$

$\cos 30° = \frac{A}{H} = \boxed{\frac{\sqrt{3}}{2}}$

$\sec 30° = \boxed{\frac{2}{\sqrt{3}}}$

2. sin120°



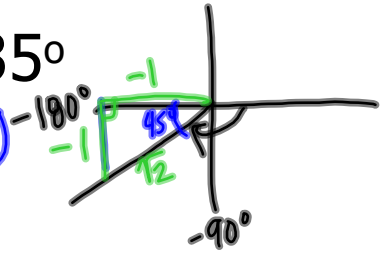
30	60	90

$\sin 60° = \frac{O}{H} = \boxed{\frac{\sqrt{3}}{2}}$

$\sec 120° = \frac{2}{-1} = -2$

3. cot-135°

$\frac{A}{O} = \frac{-1}{-1} = 1$



45	45	90
x	x	x√2
1	1	1√2

1.7 EXACT VALUES

ESSENTIAL QUESTION: How do I calculate the exact value of a given trig function?

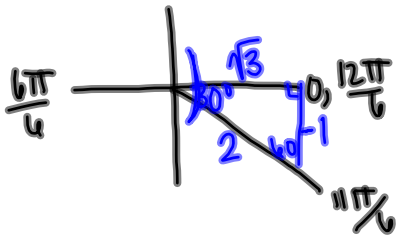
STEPS TO FIND EXACT VALUES.

1. Draw the angle in correct quadrant.
2. Find reference angle.
3. Create a right triangle with the x-axis.
4. Fill in the special right triangle with positive/negative values.
5. Find the trig ratio for reference angle.

Recall: $\frac{\pi}{6} = 30°$, $\frac{\pi}{4} = 45°$, $\frac{\pi}{3} = 60°$

4. $\csc\frac{11\pi}{6}$

$\frac{\pi}{6}$



$\csc\theta = \frac{H}{O} = \frac{2}{-1} = -2$