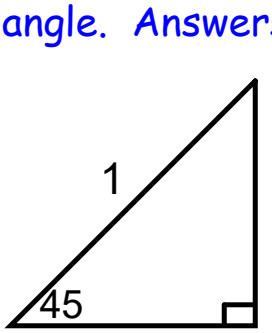
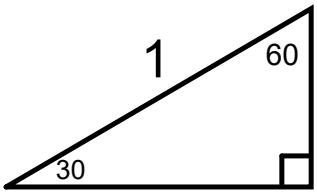
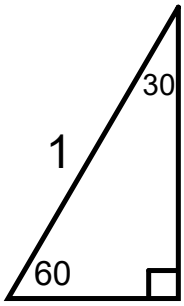
Aim: How can we use a unit circle and special triangles to find exact trigonometric values ?

Do Now: Find the lengths of the missing sides in each right triangle. Answers must be in radical form.





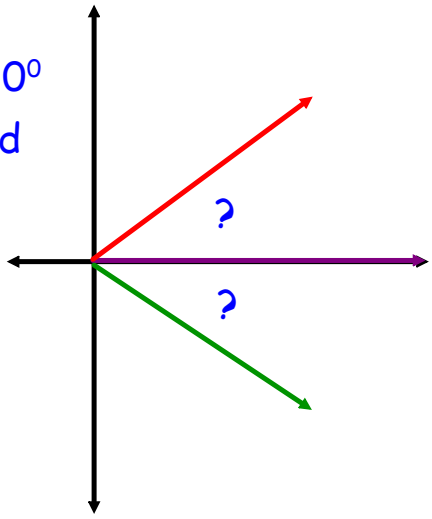


Aim: How can we use a unit circle and special triangles to find exact trigonometric values ?

If we wanted to draw an angle of positive 30^0 starting at the x-axis, which direction would we go:

Clockwise or Counter-Clockwise

(hint - remember transformations)

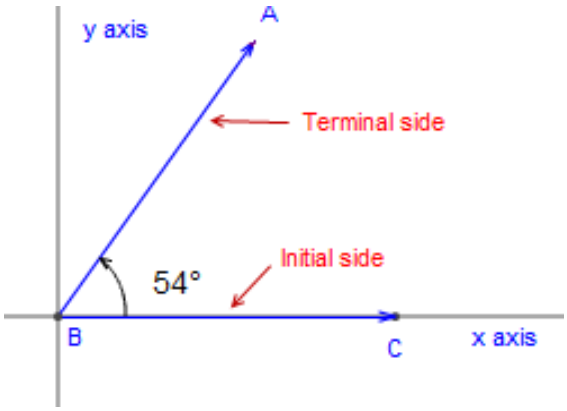


Aim: How can we use a unit circle and special triangles to find exact trigonometric values ?

Drawing an angle on a coordinate grid:

Initial Side: The positive x-axis

Terminal Side: The ray where the measurement of an angle stops (counter-clockwise).

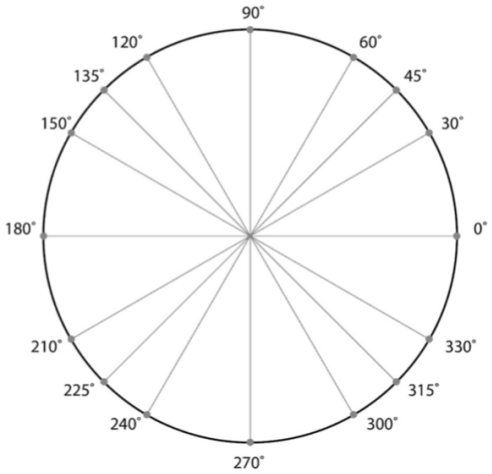


Aim: How can we use a unit circle and special triangles to find exact trigonometric values ?

Unit Circle: A circle, centered at the origin, with a radius of 1.

How do we draw an angle of 30^0

How do we draw an angle of 60^0



Aim: How can we use a unit circle and special triangles to find exact trigonometric values ?

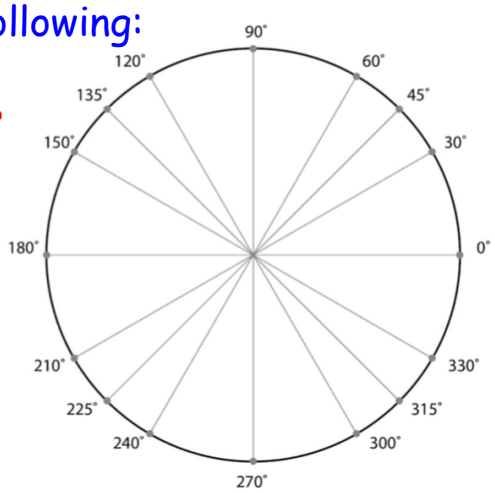
Think - Pair - Share

Using a unit circle, determine the following:

$\sin(60^0)$ We'll do this one together

$\cos(45^0)$

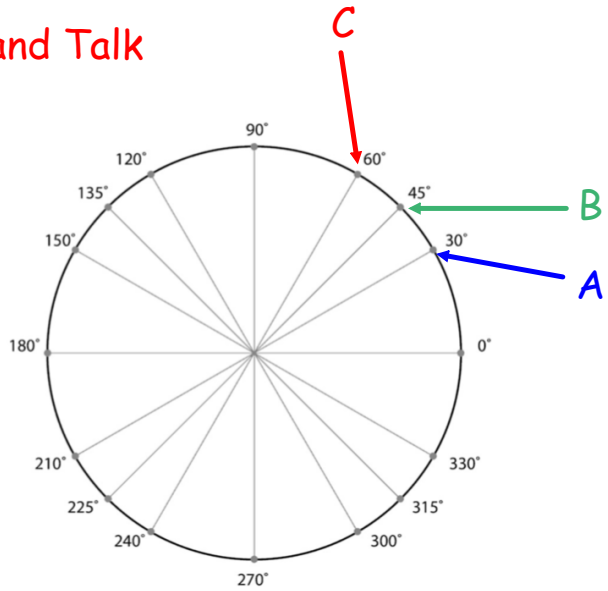
$\tan(30^0)$



Aim: How can we use a unit circle and special triangles to find exact trigonometric values ?

Turn and Talk

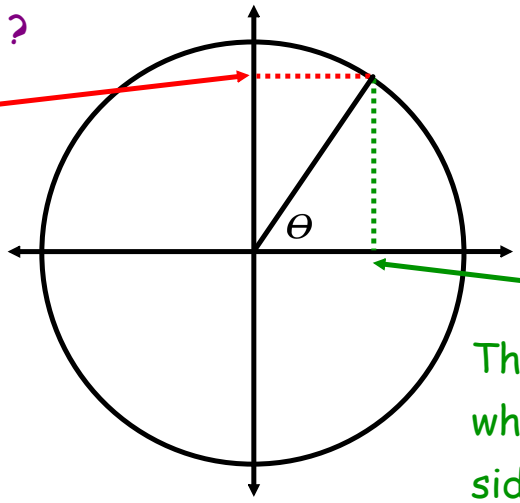
What are the coordinates of point A, B, and C?



Aim: How can we use a unit circle and special triangles to find exact trigonometric values ?

$\sin(\Theta)$

The y-coordinate of where the terminal side intersects the unit circle.



$\cos(\Theta)$

The x-coordinate of where the terminal side intersects the unit circle.

$$\tan(\Theta) = \frac{\sin(\Theta)}{\cos(\Theta)}$$

Aim: How can we use a unit circle and special triangles to find exact trigonometric values ?

Try this on your own: Fill in the following chart with exact values (radical form):

x	0	30	45	60	90
sin(x)					
cos(x)					
tan(x)					

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The left hand trick: