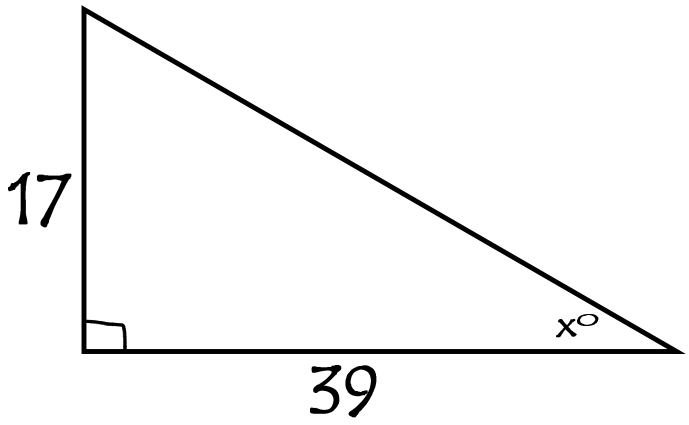
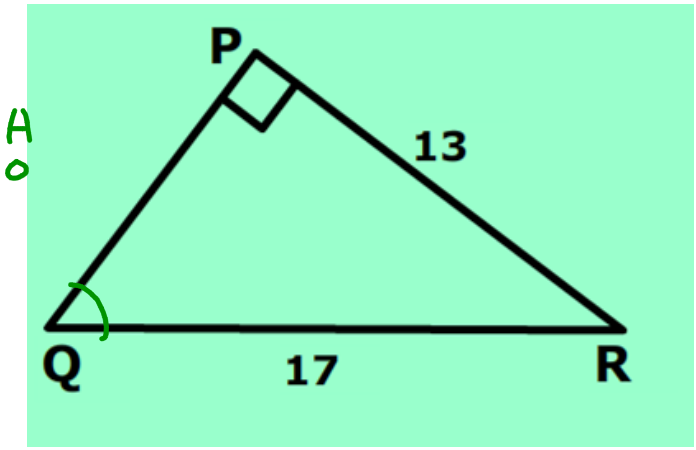
Finding Missing Angles in Right Triangles



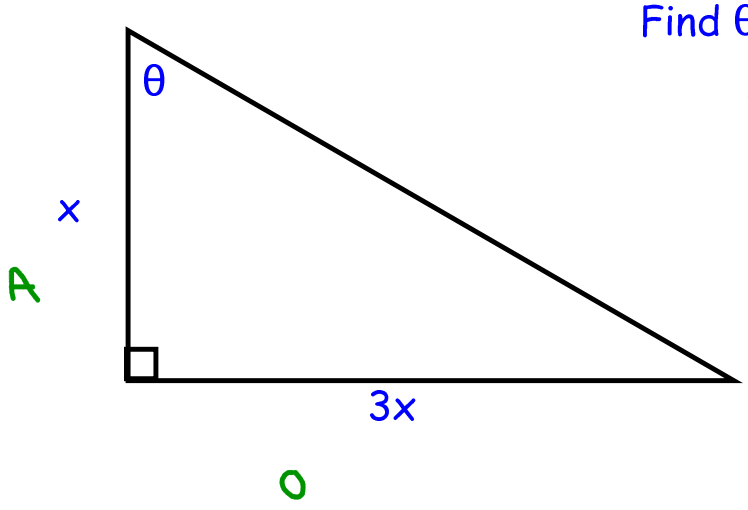
Find x.

$\tan x = \frac{17}{39} = 23.55°$



Find angle Q.

$\sin Q = \frac{13}{17} = 49.88°$



Find θ

$\tan\theta = \frac{3x}{x}$

$\tan\theta = 3$

$\tan^{-1}(3) = 71.57°$

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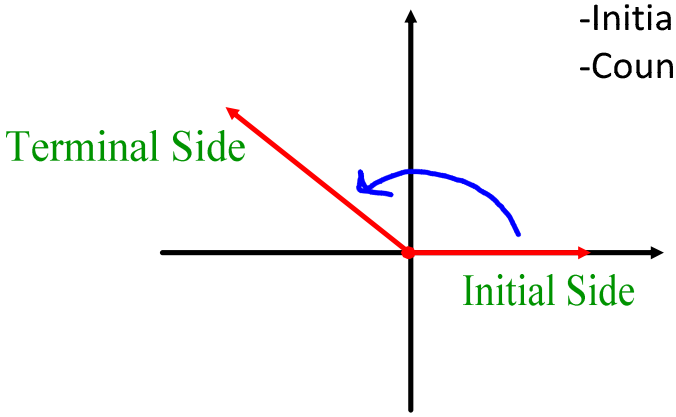
Basic Angle Vocab

Angles in Standard Position

-Vertex at origin
-Initial side on positive x-axis
-Counterclockwise direction



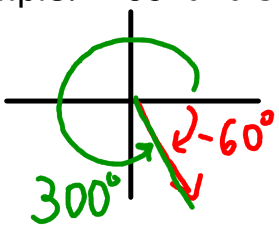
Quadrantal Angles - Terminal side is on an axis

Degrees: $0°,\ 90°,\ 180°,\ 270°,\ 360°$

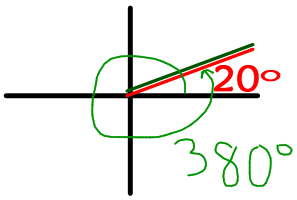
Radians: $0,\ \frac{\pi}{2},\ \pi,\ \frac{3\pi}{2},\ 2\pi$

Coterminal Angles - Terminal sides coincide

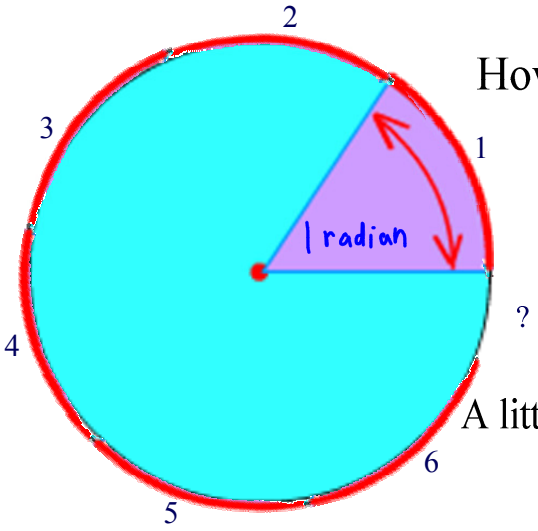
Example: $-60°$ and $300°$



$20°$ and $380°$



Radians & Degrees



How many radians are in the circumference ?

$$C = 2\pi r$$

$$\frac{C}{r} = 2\pi$$

There are 2π radians (r's) in the circumference.

A little more than 6.

$2(3.14) = 6.28$

π radians = 180°

To convert from degrees to radians:

multiply by $\frac{\pi}{180}$

(π should be in answer)

$50^\circ \cdot \frac{\pi}{180} = \frac{50\pi}{180} = \frac{5\pi}{18}$

To convert from radians to degrees:

multiply by $\frac{180}{\pi}$

(you're getting rid of π)

$\frac{5\pi}{6} \cdot \frac{180}{\pi} = 150^\circ$