October 7

Given a right triangle, with the lengths of all sides. Describe how you can find the sine, cosine and tangent of an angle.

October 7

Students will verbally explain how to find the values of all six trig functions

(using the words: opposite, adjacent, hypotenuse...)

$\sin(\theta) = \frac{\text{opposite}}{\text{hypotenuse}}$ Sine

$\csc(\theta) = \frac{\text{hypotenuse}}{\text{opposite}}$ Cosecant

$\tan(\theta) = \frac{\text{opposite}}{\text{adjacent}}$ Tangent

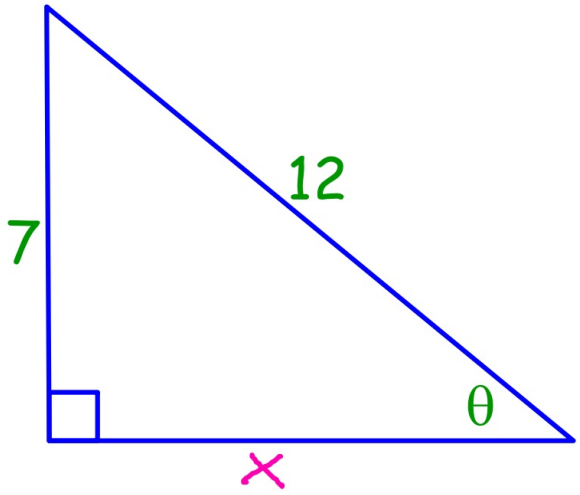
$\cot(\theta) = \frac{\text{adjacent}}{\text{opposite}}$ Cotangent

$\sec(\theta) = \frac{\text{hypotenuse}}{\text{adjacent}}$ Secant

$\cos(\theta) = \frac{\text{adjacent}}{\text{hypotenuse}}$ Cosine

hypotenuse adjacent opposite

Find the value of all six trig functions for the given angle.



$x^2 + 7^2 = 12^2$

$x^2 + 49 = 144$

$-49 \quad -49$

$x^2 = 95$

$x = \sqrt{95}$

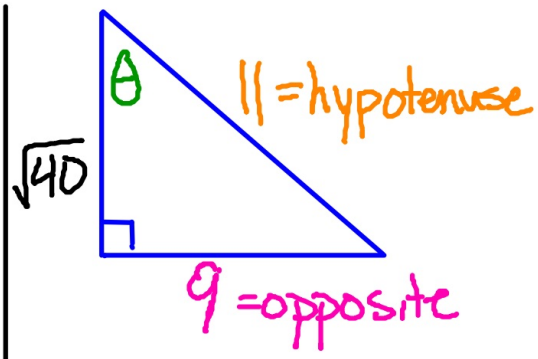
$\sin\theta = \frac{7}{12}$ $\quad \csc\theta = \frac{12}{7}$

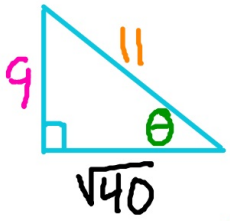
$\cos\theta = \frac{\sqrt{95}}{12}$ $\quad \sec\theta = \frac{12}{\sqrt{95}}$

$\tan\theta = \frac{7}{\sqrt{95}}$ $\quad \cot\theta = \frac{\sqrt{95}}{7}$

If $\sin\theta = \frac{9}{11}$

Find the values of the other five trig functions





$11^2 = 9^2 + x^2$

$121 = 81 + x^2$

$-81 \quad -81$

$40 = x^2$

$\sqrt{40} = x$

$\sin\theta = \frac{9}{11}$ $\quad \csc\theta = \frac{11}{9}$

$\cos\theta = \frac{\sqrt{40}}{11}$ $\quad \sec\theta = \frac{11}{\sqrt{40}}$

$\tan\theta = \frac{9}{\sqrt{40}}$ $\quad \cot\theta = \frac{\sqrt{40}}{9}$

Set 1:

pg 133 #5 - 23 (odd), 25, 29, 31 - 37

Set 2:

pg 166 #3, 6, 9, 12, 17, 19, 21, 43, 45, 48, 49, 51, 54, 55, 57, 58