

Learning Outcomes: What should you be able to after watching the videos?

- Video 1: Introduction to Right Triangle Trigonometry
 - State and use the formulas for the six trigonometric functions defined by right triangles.
 - State and use the Pythagorean Theorem to determine the length of the third side of a right triangle.
- Video 2: Special Triangles
 - Identify the relationships among the sides of 45-45-90 and 30-60-90 triangles.
 - State the values of the six trigonometric functions for acute angles.
- Video 3: Applications of the Unit Circle
 - State the reciprocal, quotient, and Pythagorean identities.
 - Use trigonometric identities to verify identities.

#1) State the formulas for the six trigonometric functions using the right triangle relationships.

$$\sin \theta =$$

$$\cos \theta =$$

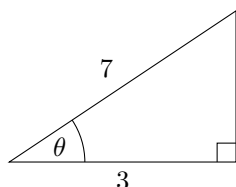
$$\tan \theta =$$

$$\csc \theta =$$

$$\sec \theta =$$

$$\cot \theta =$$

#2) Determine all six trigonometric functions for the indicated angle.



$$\sin(\theta) =$$

$$\csc(\theta) =$$

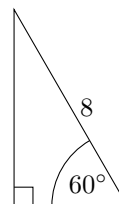
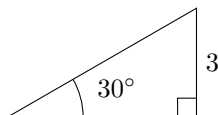
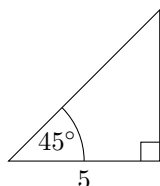
$$\cos(\theta) =$$

$$\sec(\theta) =$$

$$\tan(\theta) =$$

$$\cot(\theta) =$$

#3) Identify the lengths of the remaining sides of the triangle.



#4) Complete the following chart of values:

θ (Degrees)					
θ (Radians)	0	$\frac{\pi}{6}$	$\frac{\pi}{4}$	$\frac{\pi}{3}$	$\frac{\pi}{2}$
$\sin(\theta)$					
$\cos(\theta)$					

#5) Complete the following chart of values:

θ (Degrees)			
θ (Radians)	$\frac{\pi}{6}$	$\frac{\pi}{4}$	$\frac{\pi}{3}$
$\sin(\theta)$			
$\cos(\theta)$			
$\tan(\theta)$			
$\csc(\theta)$			
$\sec(\theta)$			
$\cot(\theta)$			

#6) State the reciprocal identities. Indicate the ones that are related to each other.

#7) State the quotient identities.

#8) State the primary Pythagorean identity.

#9) Demonstrate how to derive the two additional Pythagorean identities from the primary one.

#10) Verify the identity; $(\sec(x) + 1)(\sec(x) - 1) = \tan(x)$.

Was any aspect of any of the videos confusing or unclear? Do you have any questions?