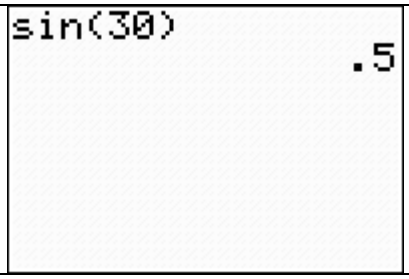
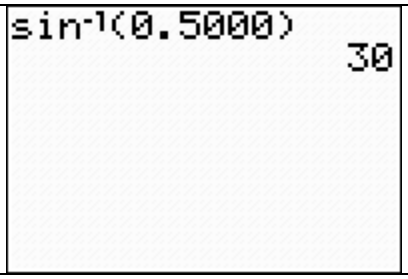
Lesson #9

The Trigonometric Functions and Inverse Trigonometric Functions

Trigonometry is the study of triangles and the relationships between the sides and angles of triangles. The SIN, COS, and TAN keys are used to find the trigonometric value of a given angle. The 2nd function of these keys, $\sin^{-1}$, $\cos^{-1}$, and $\tan^{-1}$, are used to find an angle measure when given a trigonometric value. For this lesson, press MODE and switch from radian to degree mode.

	
Using the sine function to find the decimal value of an angle.	**Using the $\sin^{-1}$ function to find the angle measure when given its decimal value**

Set 1 – Find the trigonometric values for each expression (Degree MODE).

LP#1 $\sin(30°)=$	$\sin(45°)=$	$\sin(60°)=$	$\tan(30°)=$
LP#2 $\cos(60°)=$	$\cos(45°)=$	$\cos(30°)=$	$\tan(90°)=$
R#1 $\sin(40°)=$	$\cos(50°)=$	$\tan(60°)=$	$\cos(62°)=$
R#2 $\tan(0°)=$	$\sin(10°)=$	$\cos(80°)=$	$\sin(30°)=$

R#3 $\sin(25°)=$	$\cos(65°)=$	$\tan(30°)=$	$\tan(45°)=$

Set 2 – Find an angle measure for each expression in the interval $0° \le x \le 90°$.
The calculator needs to be in degree mode.

LP#1 $\sin\theta = 0.8660$	$\sin\theta = 1.2854$	$\sin\theta = 0.6301$	$\tan\theta = 1.7321$
LP#2 $\cos\theta = 0.8660$	$\cos\theta = 0.4589$	$\cos\theta = 1.8671$	$\tan\theta = 1.0000$
R#1 $\sin\theta = 0.7071$	$\cos\theta = 0.6691$	$\tan\theta = 0.5774$	$\cos\theta = 0.2113$
R#2 $\tan\theta = 0.5455$	$\sin\theta = 0.9121$	$\cos\theta = 1.4381$	$\sin\theta = 0.3365$
R#3 $\sin\theta = 1.6542$	$\cos\theta = 0.1325$	$\tan\theta = 3.6532$	$\tan\theta = 1.8660$