

TI-83 Lab 9 For Mathematics 223

Topics: Trigonometric Functions

Radian and Degrees, $\cos t$, $\sin t$ and $\tan t$.

1. *Mode: Radians.* We will find the value of $\sin t$, $\cos t$ and $\tan t$ when t is in radians; in particular, when $t = \frac{\pi}{4}$. Type MODE, then arrow down to Radian and press ENTER to select this item and then 2nd QUIT.
 - (a) Type SIN 2nd $\pi \div 4$) ENTER and 0.707... should be returned.
 - (b) Type COS 2nd $\pi \div 4$) ENTER and 0.707... should be returned.
 - (c) Type TAN 2nd $\pi \div 4$) ENTER and 1 should be returned.
2. *Mode: Degrees.* We will find the value of $\cos t$, $\sin t$ and $\tan t$ when t is in degrees; in particular, when $t = 60^\circ$. Type MODE, then arrow down and over to Degree and press ENTER to select this item and then 2nd QUIT.
 - (a) Type SIN 60) ENTER and 0.866... should be returned.
 - (b) Type COS 60) ENTER and 0.5 should be returned.
 - (c) Type TAN 60) ENTER and 1.732... should be returned.
3. *2nd ANGLE: Radians.* We will find the value of $\cos t$, $\sin t$ and $\tan t$ when t is in radians; in particular, when $t = \frac{\pi}{4}$. *No matter what* MODE is set as (either Radian or Degree),
 - (a) Type SIN ($\pi \div 4$) 2nd ANGLE 3:^r) ENTER and 0.707... should be returned.
 - (b) Type COS ($\pi \div 4$) 2nd ANGLE 3:^r) ENTER and 0.707... should be returned.
 - (c) Type TAN ($\pi \div 4$) 2nd ANGLE 3:^r) ENTER and 1 should be returned.
4. *2nd ANGLE: Degrees.* We will find the value of $\cos t$, $\sin t$ and $\tan t$ when t is in radians; in particular, when $t = 60$. *No matter what* MODE is set as (either Radian or Degree),
 - (a) Type SIN 60 2nd ANGLE 1:^o) ENTER and 0.866... should be returned.
 - (b) Type COS 60 2nd ANGLE 1:^o) ENTER and 0.5... should be returned.
 - (c) Type TAN 60 2nd ANGLE 1:^o) ENTER and 1.732 should be returned.

$\cos^{-1} t$, $\sin^{-1} t$ and $\tan^{-1} t$.

1. *Mode: Radians.* We will find the value of t in radians, if $\sin t = \cos t = \tan t = 0.435$. Type MODE, then arrow down to Radian and press ENTER to select this item and then 2nd QUIT.
 - (a) Type 2nd SIN^{-1} 0.435) ENTER and 0.450... radians should be returned.
 - (b) Type 2nd COS^{-1} 0.435) ENTER and 1.120... radians should be returned.
 - (c) Type 2nd TAN^{-1} 0.435) ENTER and 0.410... radians should be returned.
2. *Mode: Degrees.* We will find the value of t in degrees, if $\sin t = \cos t = \tan t = 0.435$. Type MODE, then arrow down and over to Degree and press ENTER to select this item and then 2nd QUIT.
 - (a) Type 2nd SIN^{-1} 0.435) ENTER and 25.785... degrees should be returned.
 - (b) Type 2nd COS^{-1} 0.435) ENTER and 64.214... degrees should be returned.
 - (c) Type 2nd TAN^{-1} 0.435) ENTER and 23.509... degrees should be returned.