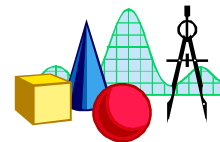




# MATH DEPT. TUTORIAL 8



## Tutorial 8: Trigonometry II: unit circle, graphs, inverse of sine, cosine and tangent, radian measure.

- Convert each of the following angles to radian measure
 

(i) $135^\circ$	(iii) $-150^\circ$
(ii) $225^\circ$	(iv) $390^\circ$
  - Convert each of the following angles ( in radian measure ) to degrees.
 

(i) $\frac{7\delta}{4}$	(iii) $\frac{9\delta}{20}$
(ii) $\frac{5\delta}{3}$	(iv) $\frac{11\delta}{4}$
- A point on the terminal side of an angle drawn in the plane with the positive x-axis as the initial ray is given. Find the exact value of the six trigonometric functions.
 

(i) $(5, -12)$	(ii) $(-1, -2)$	(iii) $(-3, 2)$
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  - Find the reference angle of each angle.
 

(i) $-30^\circ$	(iii) $240^\circ$
(ii) $\frac{5\delta}{6}$	(iv) $-135^\circ$
  - Find the exact value of each expression without the use of a calculator.
 

(i) $\sin 405^\circ$	(iii) $\sec 19\delta/6$
(ii) $\cot 17\delta/4$	(iv) $\tan 225^\circ$
  - Find the exact value of each of the remaining trigonometric functions of  $\phi$  .
 

(i) $\cos \phi = -\frac{4}{5}$ , $\delta < \phi < 3\delta/2$	(iii) $\tan \phi = 1/4$ , $\sin \phi < 0$
(ii) $\sin \phi = 5/13$ , $\cos \phi < 0$	(iv) $\sec \phi = 2$ , $\sin \phi < 0$
- Determine the period and amplitude of each of the following functions.
 

(i) $y = 2 \sin x$	(ii) $y = -4 \cos 2\delta x$	(iii) $y = -3 \sin \frac{1}{2} x$
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- Graph each of the following functions.
 

(i) $y = 4 \cos 2x$	(ii) $y = -2 \cos 2\delta x$	(iii) $y = \sec 2x$
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- Find each of the following without the use of a calculator.
 

(i) $\arcsin \frac{1}{2}$	(iii) $\arctan 1$	(v) $\sin(\arccos \frac{1}{2})$
(ii) $\arccos -\frac{\sqrt{2}}{2}$	(iv) $\arctan -\sqrt{3}$	(vi) $\sec(\arcsin(-\frac{1}{2}))$
- Graph each of the following functions
 

(i) $y = 2 \arcsin \frac{1}{2} x$	(ii) $y = 3 \arctan 2x$
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