

Math 06, Homework 9 on Trigonometric Functions and Cartesian Coordinates
due Mon, Nov 11 at the start of class.

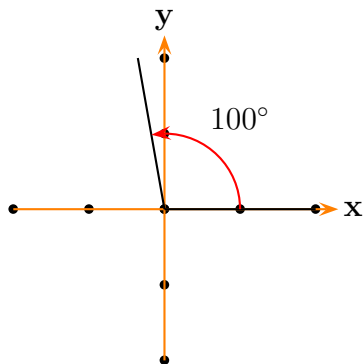
Write all your answers on a separate sheet. It is very important that you show clearly any work you had to do to get the answer. These first eight questions are 1 point each. Make sure your answers match the solutions on page 2.

- (1) Sketch the angle $\theta = 100^\circ$ in standard position and name the quadrant in which the terminal side lies.
 - (2) Sketch the angle $\theta = -150^\circ$ in standard position and name the quadrant in which the terminal side lies.
 - (3) Provide two angles, one positive and one negative, that are coterminal with $\alpha = -30^\circ$.
 - (4) If θ is in standard position with $\cos \theta > 0$ and $\tan \theta < 0$, name the quadrant in which the terminal side must lie.
 - (5) If θ is in standard position with $\cos \theta = 4/5$ and the terminal side is in quadrant IV, find $\sin \theta$ and $\tan \theta$.
 - (6) Find the exact value of $\cos 150^\circ$. Confirm your result with a calculator.
 - (7) Find all values of θ between 0 and 360 where $\cos \theta = -1/2$.
 - (8) Find all values of θ between 0 and 360 (expressed to the nearest whole degree) where $\tan \theta = 2.6051$.
-

These next seven questions are 4 points each. Show clearly all your working out and reasoning.

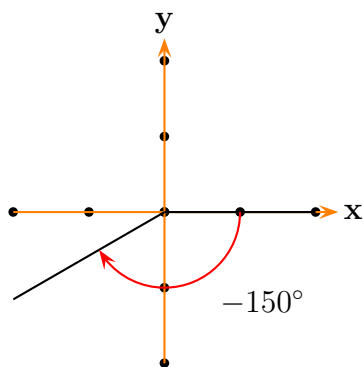
- (9) Sketch the angle $\theta = 445^\circ$ in standard position and name the quadrant in which the terminal side lies.
- (10) If θ is in standard position with $\sin \theta < 0$ and $\tan \theta > 0$, name the quadrant in which the terminal side must lie.
- (11) Is it possible to have an angle θ with all three trigonometric ratios negative? Explain.
- (12) If $\tan \theta = 7$ and $\cos \theta < 0$, find $\sin \theta$.
- (13) Find with a calculator, correct to 4 decimal places: $\sin 1000^\circ$
- (14) Give the exact value for: $\sin 315^\circ$. Confirm your result with a calculator.
- (15) Find the two values of θ between 0 and 360 where $\tan \theta = 1$.

Answers to questions (1)-(8):



Quadrant II

(1)



Quadrant III

(2)

(3) 330° and -390°

(4) Quadrant IV

(5) $\sin \theta = -3/5$, $\tan \theta = -3/4$

(6) $\cos 150^\circ = -\sqrt{3}/2$

(7) $\theta = 120^\circ$ or 240°

(8) $\theta = 69^\circ$ or 249°