

Math 06, Homework 9 on Trigonometric Functions and Cartesian Coordinates
due Tue, April 16 at the start of class.

These first eight questions from the Trigonometry Supplement are 2 points each. Write your work on a separate sheet. Show clearly all your working out and reasoning and check your answers match the ones in the book at the end of each section.

1. **Q1, p. 112.** Sketch the angle $\theta = 100^\circ$ in standard position and name the quadrant in which the terminal side lies.
 2. **Q5, p. 112.** Sketch the angle $\theta = -150^\circ$ in standard position and name the quadrant in which the terminal side lies.
 3. **Q13, p. 112.** Provide two angles, one positive and one negative, that are coterminal with $\alpha = -30^\circ$.
 4. **Q35, p. 112.** 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. **Q37, p. 112.** 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. **Q45, p. 113.** Find the exact value of $\cos 150^\circ$. Confirm your result with a calculator.
 7. **Q63, p. 113.** Find all values of θ between 0 and 360 where $\cos \theta = -1/2$.
 8. **Q75, p. 113.** Find all values of θ between 0 and 360 (expressed to the nearest whole degree) where $\tan \theta = 2.6051$.
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These next seven questions are 2 points each. It is very important that you show clearly any work you had to do to get the answer and explain your 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 $\tan \theta = 1$.