

Name: _____

Score: _____

Show your work to receive credit for your answers.

1. Determine the quadrant in which the terminal side of the angle lies if the angle is in standard position:

a. 20°

b. $\frac{4p}{3}$

c. -100°

d. $\frac{7p}{3}$

d. 300°

2. Convert each angle to decimal degree form:

a. $52^\circ 17' 9''$

b. $-30^\circ 19' 2''$

3. Convert the angle measure to $D^\circ M' S''$: 242.179° .

4. Find (if possible) the complement and supplement of each angle.

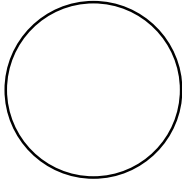
a. 17°

b. $\frac{2p}{3}$

5. Convert the angle from degrees to radian measure (give and exact answer, not a decimal approximation): 150° .

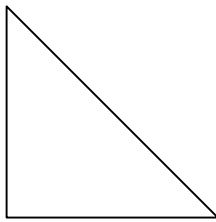
6. Convert the angle from radians to degrees (give and exact answer, not a decimal approximation): $\frac{5p}{4}$.

7. Find the indicated angle in radians:



8. A car is moving at a rate of 45 miles per hour, and the diameter of its wheels is 2.5 feet. Find the number of revolutions per hour the wheels are rotating.

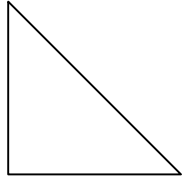
9. Find the exact values of the six trigonometric functions of the angle θ depicted in the right triangle:



10. Sketch a right triangle having an acute angle θ such that $\sin \theta = \frac{3}{4}$. Fill in the lengths of the sides using the Pythagorean Theorem and then evaluate the other five trigonometric functions.

11. Given that $\sec \theta = 5$ and $\tan \theta = 2\sqrt{6}$, evaluate the other four trigonometric functions.

12. Solve for x :



13. Determine the exact values (no decimal approximations) of the six trigonometric functions for the angle θ depicted in the diagram:

14. The point $(2,3)$ lies on the terminal side of an angle θ in standard position. Determine the exact values of $\sin \theta$ and $\cot \theta$.

15. In which quadrant is θ if $\sin \theta < 0$ and $\cos \theta < 0$?

16. If the terminal side of θ lies in quadrant IV on the line $y = -x$, find $\sin \theta$ and $\sec \theta$.

17. Fill in the blank entries in the following table:

| θ (degrees) | θ (radians) | $\sin \theta$ | $\cos \theta$ |
|--------------------|--------------------|---------------|---------------|
| 30° | | | |
| 45° | | | |
| 60° | | | |

18. Find the value of the reference angle θ' if $\theta = 302^\circ$.

19. Given that $\cos \theta = -4/5$ and θ lies in quadrant IV, find $\tan \theta$.

20. Match each graph with the letter for the appropriate function:

A. $\cos \theta$

B. $\sin \theta$

C. $\sec \theta$

D. $\csc \theta$

E. $\cot \theta$

F. $\tan \theta$

