

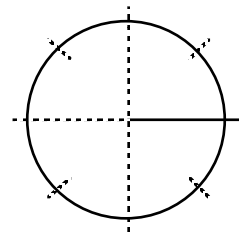
Rationalize all denominators, as necessary.

Rationalize the denominator and simplify the expression.

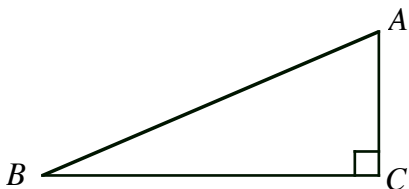
1. $\frac{-6}{3 - \sqrt{6}}$

What degree measure represents the given portion of a circle? Draw a central angle that has that same number of degrees.

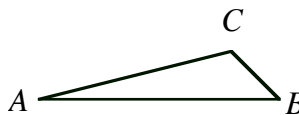
2. $\frac{7}{9}$ of a circle



3. In $\triangle ABC$, $m\angle B = 22^\circ 18' 41''$. Find $m\angle A$.



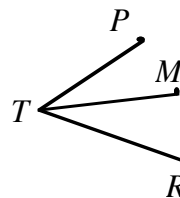
4. In $\triangle ABC$, $m\angle A = 17^\circ 26' 38''$ and $m\angle B = 44^\circ 31' 55''$. Find $m\angle C$.



5. At right, \overline{TM} bisects $\angle PTR$.

a) If $m\angle PTM = 28^\circ 43' 52''$, find $m\angle PTR$.

b) If $m\angle PTR = 63^\circ 31' 18''$, find $m\angle PTM$.

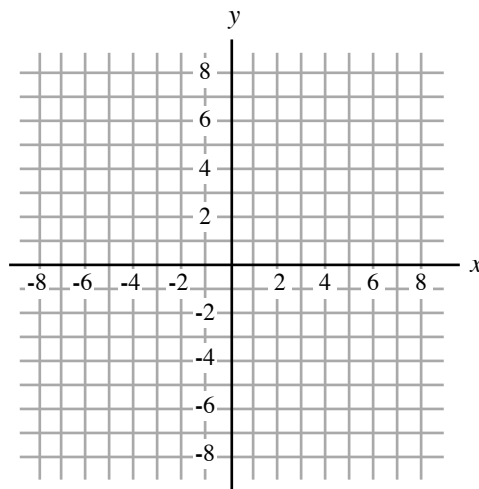


6. Consider a circle centered at the origin that passes through $(-4, 2\sqrt{5})$.

a) Find the radius of the circle

b) Draw its graph.

c) What is the equation of the circle?



Verify that the given point is on the unit circle.

7. $\left(-\frac{5\sqrt{3}}{9}, \frac{\sqrt{6}}{9}\right)$

Use the identity $\sin\theta = \pm\sqrt{1 - \cos^2\theta}$ to find $\sin\theta$.

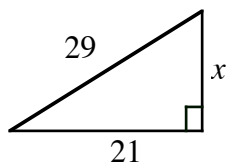
8. $\cos\theta = -\frac{\sqrt{5}}{3}$ and θ terminates in QIII..

9. The radius of a circle is 4 inches, and the measure of Arc_{AB} is $\frac{20\pi}{3}$. Determine the measure of the central angle that subtends Arc_{AB} .

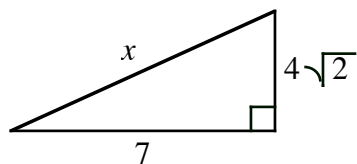
10. The radius of a circle is 6 inches, and the measure of a central angle, $m\angle AOB$ is 80° . Determine the length of the arc it subtends.

Find the value of x in the given triangle and simplify completely.

11.

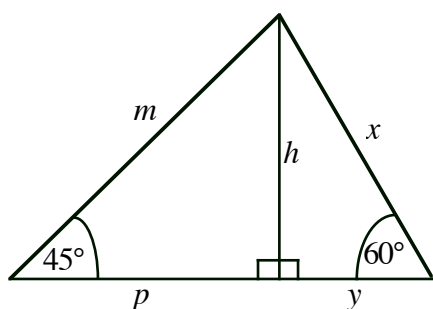


12.



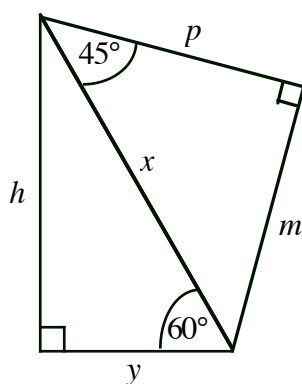
Find the values of h , m , p , x , and y , which represent the lengths of the sides of these triangles. Simplify completely.

13.



- a) $x = 4$ $y =$
 $h =$
 $p =$
 $m =$
- b) $h = 9$ $y =$
 $x =$
 $p =$
 $m =$
- c) $m = 12$ $p =$
 $m =$
 $y =$
 $x =$

14.



- a) $y = 5$ $h =$
 $x =$
 $m =$
 $p =$
- b) $x = 6\sqrt{3}$ $y =$
 $h =$
 $m =$
 $p =$
- c) $h = 9\sqrt{2}$ $y =$
 $x =$
 $m =$
 $p =$

15. Based on the given information, in which quadrant does θ terminate?

a) $\sec\theta < 0$ and $\sin\theta > 0$

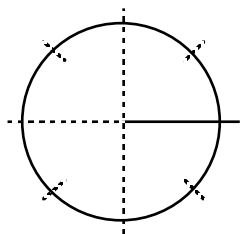
b) $\tan\theta > 0$ and $\cos\theta < 0$

c) $\csc\theta > 0$ and $\tan\theta > 0$

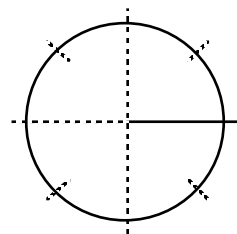
d) $\cot\theta < 0$ and $\cos\theta < 0$

For each given angle measure, (i) locate it in a circle using standard position, and (ii) identify an angle **between 0° and 360°** that is coterminal with it.

16. $\theta = -240^\circ$



17. $\theta = 930^\circ$



Locate the given point in the x - y -plane, and draw a positive angle θ whose terminal side contains the point. Then, find the values of the six trig functions of θ and simplify.

18. $(3, -\sqrt{7})$

$\sin\theta =$

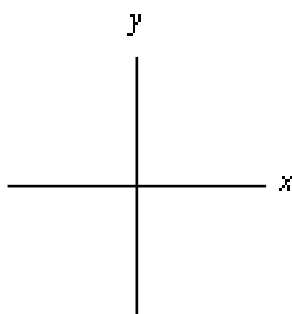
$\cos\theta =$

$\tan\theta =$

$\cot\theta =$

$\sec\theta =$

$\csc\theta =$



What is r ?

19. $(0, 2)$

$\sin\theta =$

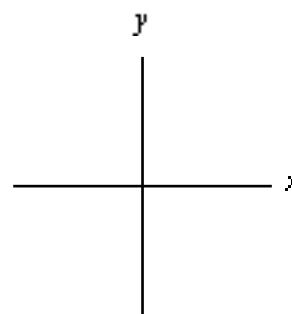
$\cos\theta =$

$\tan\theta =$

$\cot\theta =$

$\sec\theta =$

$\csc\theta =$



What is r ?

Find and simplify the requested trig values based on the information given. Rationalize the denominator, if necessary.

20. If θ terminates in Quadrant IV

and $\cot \theta = -\frac{3}{4}$, find

$$\sin \theta =$$

$$\tan \theta =$$

$$\sec \theta =$$

21. If θ terminates in Quadrant II

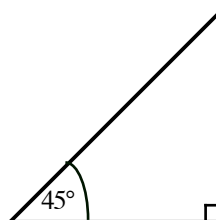
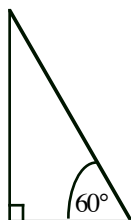
and $\csc \theta = \frac{3}{\sqrt{5}}$, find

$$\sin \theta =$$

$$\cos \theta =$$

$$\tan \theta =$$

22. Use the given triangles and mark them however you wish to assist you in finding the following trig values. (Simplify and rationalize the denominator, if necessary.)



$$\sin 30^\circ =$$

$$\sin 60^\circ =$$

$$\sin 45^\circ =$$

$$\cos 30^\circ =$$

$$\cos 60^\circ =$$

$$\cos 45^\circ =$$

$$\tan 30^\circ =$$

$$\tan 60^\circ =$$

$$\tan 45^\circ =$$

$$\cot 30^\circ =$$

$$\cot 60^\circ =$$

$$\cot 45^\circ =$$

$$\sec 30^\circ =$$

$$\sec 60^\circ =$$

$$\sec 45^\circ =$$

$$\csc 30^\circ =$$

$$\csc 60^\circ =$$

$$\csc 45^\circ =$$

Evaluate each. Simplify; rationalize the denominator, if necessary.

23. $2\sqrt{3} \sin 60^\circ$

24. $\sqrt{\cot 45^\circ}$

25. $\sqrt{\sec 60^\circ}$

26. $(\tan 30^\circ)^2$

27. $(\csc 45^\circ)^2$

28. $\tan 60^\circ \cdot \cos 30^\circ$