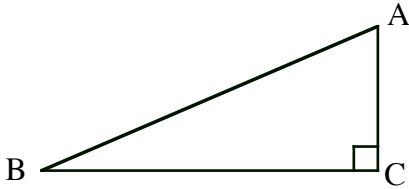


Test 1 Pre-Test

Rationalize all denominators, as necessary.

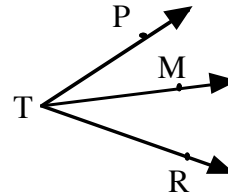
1. Without a calculator, write $37^\circ 24' 36''$ in decimal form. Show all work.
3. In $\triangle ABC$, $m\angle B = 22^\circ 18' 41''$. Find $m\angle A$.



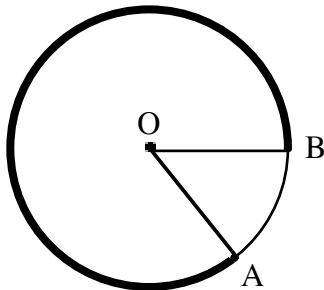
2. Without a calculator, write 37.15° in DMS (degrees/minutes/seconds) form. Show all work.
4. In $\triangle ABC$, $m\angle B = 17^\circ 26' 38''$ and $m\angle A = 44^\circ 31' 55''$. Find $m\angle C$.



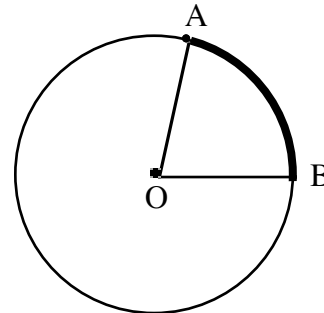
5. Ray TM bisects $\angle PTR$.
 - a) If $m\angle PTM = 28^\circ 43' 52''$, find $m\angle PTR$.
 - b) If $m\angle PTR = 63^\circ 31' 18''$, find $m\angle PTM$.



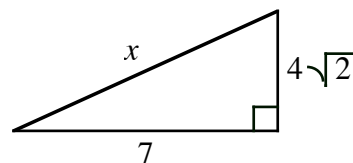
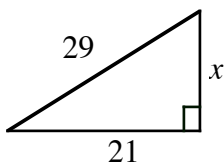
6. The radius of a circle is 4 inches, and the measure of Arc_{AB} is $\frac{20\pi}{3}$. Determine the measure of the central angle that subtends Arc_{AB} .



7. 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.

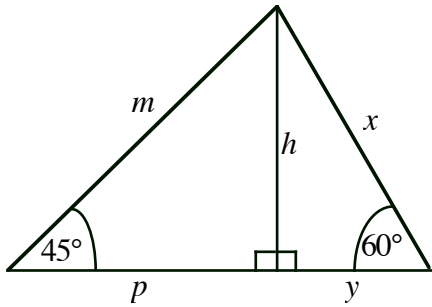


8. Find the value of x in the given triangle and simplify completely.
 - a)
 - b)



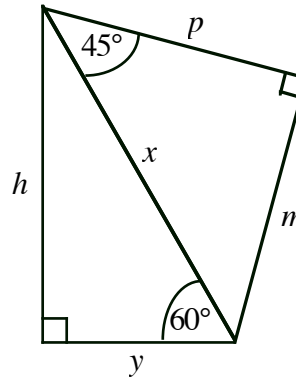
9. Find the values of h , m , p , x , and y , which represent the lengths of the sides of these triangles. Simplify completely.

a)



- i) $x = 4$
- ii) $h = 9$
- iii) $m = 12$

b)



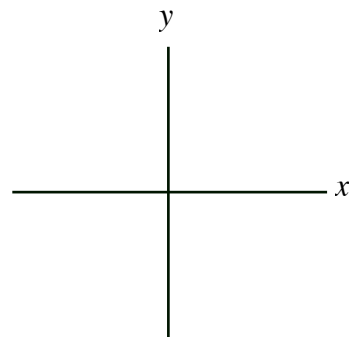
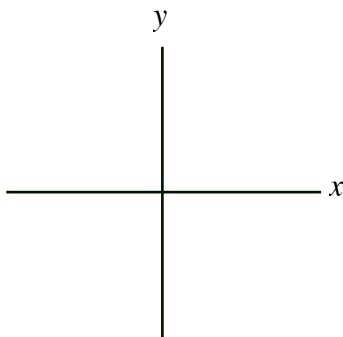
- i) $y = 5$
- ii) $x = 6\sqrt{3}$
- iii) $h = 9\sqrt{2}$

10. 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 $\cos \theta < 0$

11. Draw the given angle in standard position on the graph provided. Name an angle that is coterminal to it but that has a different sign (positive or negative) than the given angle.

- a) $\theta = -240^\circ$
- b) $\theta = 420^\circ$



12. 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 . Simplify each value. Rationalize the denominator, if necessary.

- a) point $(-3, 4)$
- b) point $(0, 2)$

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

a) If θ terminates in Quadrant IV

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

$\sin\theta =$

$\tan\theta =$

$\sec\theta =$

b) If θ terminates in Quadrant II

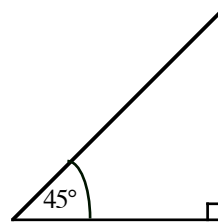
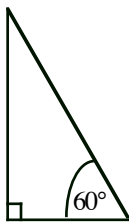
and $\csc\theta = \sqrt{2}$, find

$\sin\theta =$

$\cos\theta =$

$\tan\theta =$

14. 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.)



$\sin 30^\circ =$

$\cos 30^\circ =$

$\tan 30^\circ =$

$\cot 30^\circ =$

$\sec 30^\circ =$

$\csc 30^\circ =$

$\sin 60^\circ =$

$\cos 60^\circ =$

$\tan 60^\circ =$

$\cot 60^\circ =$

$\sec 60^\circ =$

$\csc 60^\circ =$

$\sin 45^\circ =$

$\cos 45^\circ =$

$\tan 45^\circ =$

$\cot 45^\circ =$

$\sec 45^\circ =$

$\csc 45^\circ =$

15. Write each in terms of sine and cosine only. and then simplify completely.

a) $\sin\theta \cdot \cot\theta + \cos\theta$

b) $\sec\theta - \tan\theta \cdot \sin\theta$

16. Show that the left side of this identity is equivalent to the right side. (Simplify the left side only.)

$$\frac{\sec\theta}{\sec^2\theta - 1} = \frac{\cos\theta}{\sin^2\theta}$$

17. In the expression $\sqrt{4 - x^2}$, replace x with $2\sin\theta$ and simplify completely.