

Algebra/Trig  
Review for Cosines/Sines Quiz

**Find five different values for  $x$  in the equations below.**

1.  $\sin x = -0.7296$

2.  $\cos x = 0.4385$

**Find the value in the proper domain.**

3.  $\sin^{-1}\left(\frac{\sqrt{3}}{2}\right) =$

4.  $\cos\left(\sin^{-1}\left(\frac{\sqrt{2}}{2}\right)\right) =$

5.  $\sin^{-1}\cos(-90^\circ) =$

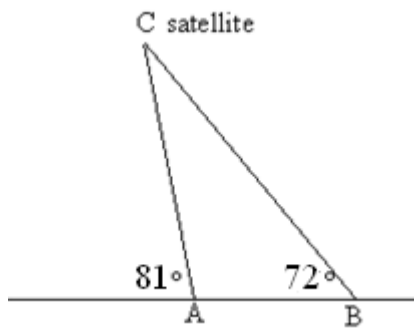
6.  $\cos^{-1}(-1) =$

7. The vertical displacement  $d$  of a mass oscillating at the end of the spring, measured in cm, is given by the equation  $d = 3 \sin(\pi t)$ , where  $t$  is the time in seconds. At what time does  $d$  first equal 2.5 cm? **(You need to be in radian mode for this equation.)**

8. An equation for the number of hours of daylight ( $h$ ) as a function of the number of days after March 21 ( $d$ ) in Gulfport is  $h = 11.72 + 2.24 \sin\left(\frac{2\pi d}{365}\right)$ . Find one of the days after March 21 that Gulfport has 10.8 hours of daylight. **(You need to be in radian mode for this equation.)**

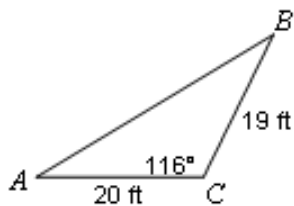
9. Two ships leave a harbor at the same time, traveling on courses that have an angle of 128 degrees between them. If the first ship travels at 32 miles per hour and the second ship travels at 28 miles per hour, how far apart are the two ships after 4 hours? (*You need to be in degree mode for this problem*).

10. The path of a satellite orbiting the earth causes it to pass directly over two tracking stations, A and B, which are 73 miles apart. When the satellite is on one side of the two stations, the angles of elevation at A and B are measured to be 81 degrees and 72 degrees. How far is the satellite from station A?

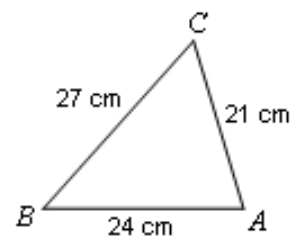


Solve each triangle. Round your answers to the nearest tenth.

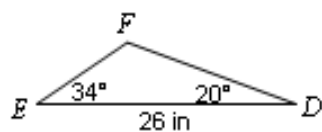
11)



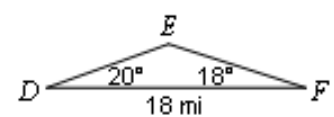
12)



13)



14)



**State the number of possible triangles that can be formed using the given measurements.**

15) In  $\triangle TRS$ ,  $m\angle T = 70^\circ$ ,  $s = 32$  km,  $t = 31$  km

16) In  $\triangle RPQ$ ,  $m\angle R = 88^\circ$ ,  $q = 13$  yd,  $r = 26$  yd

17) In  $\triangle RST$ ,  $m\angle R = 61^\circ$ ,  $t = 32$  mi,  $r = 30$  mi