

1. If  $\sin \theta = \frac{-3}{5}$  and  $\theta$  is a third quadrant angle, find the  $\cos \theta$ .
2. If  $\cos \theta = -1/3$  and  $0 < \theta < 180^\circ$ , find the  $\sin \theta$ .
3. Find the exact value of each.
  - a)  $\cos \frac{\pi}{3}$
  - b)  $\sin \frac{\pi}{4}$
  - c)  $\sin 225^\circ$
  - d)  $\cos 135^\circ$
4. What is the value of ...
  - a)  $\cos^{-1}\left(\frac{1}{2}\right)$
  - b)  $\tan^{-1}(-1)$
5. Express the value of each to four decimal places.
  - a)  $\sin 105^\circ$
  - b)  $\csc \frac{\pi}{4}$
  - c)  $\sec 57^\circ$
  - d)  $\cot \frac{\pi}{3}$
6. A sector of a circle has a radius of 8 cm and a central angle of  $27^\circ$ . Find its arc length and area.
7. Find two angles, one positive and one negative, which are coterminal with  $60^\circ$ .
8. Simplify  $(\tan x)\left(\frac{1}{\sec x}\right)$ .
9. Express  $\sin 400^\circ$  as a reference angle.

10. Simplify the following trigonometric expression.

$$\frac{1 - \cos^2 x}{\sin^2 x + \cos^2 x}$$

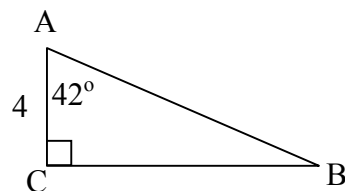
11. What is the amplitude and period of  $y = -11 \sin \frac{1}{2} x$ ?

12. List the remaining four trigonometric identities in terms of their reciprocals. Two identities are already given.

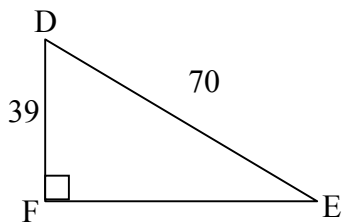
$$\tan \theta = \frac{1}{\cot \theta}$$

$$\sec \theta = \frac{1}{\cos \theta}$$

13. Solve the right triangle ABC.

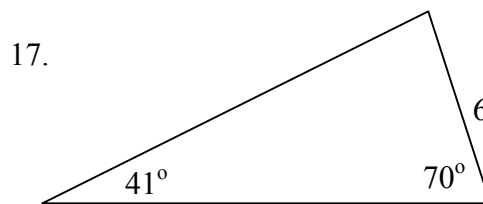
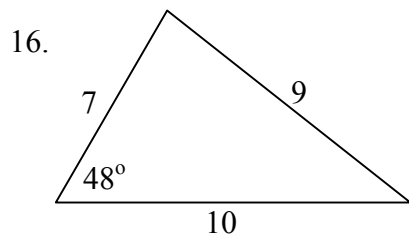


14. Solve the right triangle DEF.



15. The safety instructions for a 18 foot ladder state that the ladder should not be at an incline greater than 55°. If the ladder was inclined at this angle, what is the height the ladder could reach?

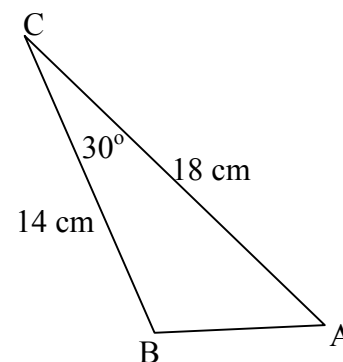
Find the area of the triangles for problems #16 – #18.



18. In  $\triangle CHS$  if  $c = 10$ ,  $h = 20$ , and  $m\angle S = 35^\circ$ .

19. Solve triangle  $ABC$  if  $\angle A = 40^\circ$ ,  $\angle B = 65^\circ$ , and  $a = 12$ .

20. Solve the triangle to the right.



21. If  $a = 10$ ,  $b = 8$ , and  $c = 15$ , solve the triangle.

22. Charter High School has 1300 students and 100 staff members. The school newspaper interviewed 120 students and 20 teachers to see whether they were in favor of changing the schedule of the day to block scheduling. The results are listed in the table.

Stratum	Population Size	Sample Size	Number in favor of change
Students	1300	120	62
Staff	100	20	9
Total	1400	140	71

Estimate the percent of the school in favor of block scheduling.



Multiple Choice.

33. If  $0^\circ \leq x \leq 360^\circ$  solve  $2\sin^2 x = 5\sin x + 3$

a)  $30^\circ, -30^\circ$

b)  $210^\circ, 330^\circ$

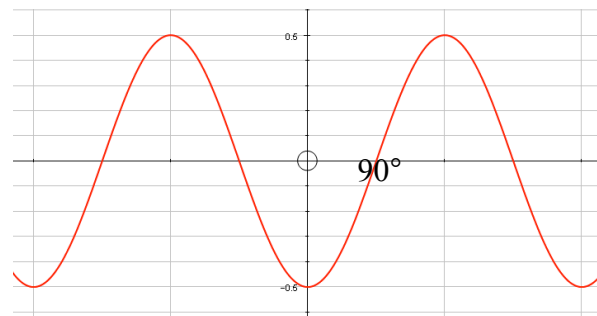
c)  $30^\circ, 330^\circ$

d)  $30^\circ, 210^\circ$

34. Match the function to the correct graph.

1.  $f(x) = \sin x$

A)

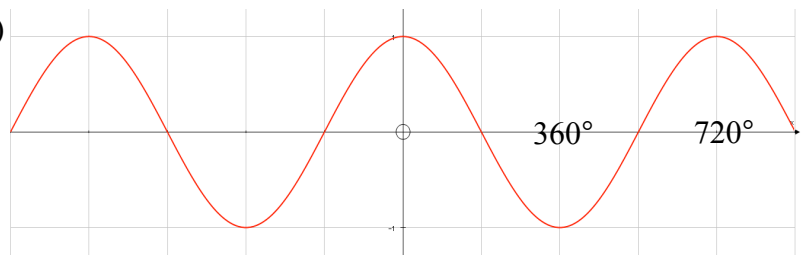


2.  $f(x) = -\frac{1}{2} \cos x$

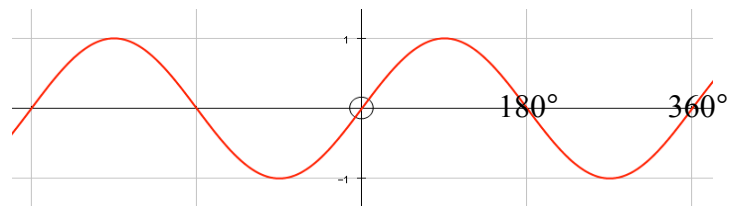
3.  $f(x) = \cos(2x)$

4.  $f(x) = \cos(\frac{1}{2}x)$

B)



C)



D)

