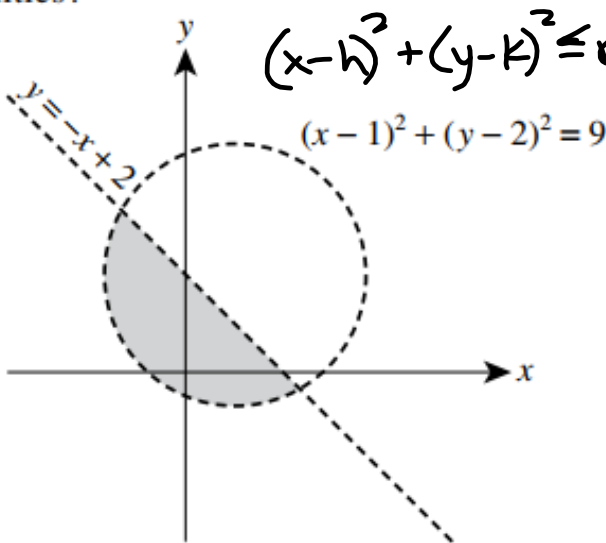


# Bellwork: ACT Prep

The shaded region in the graph below represents the solution set to which of the following systems of inequalities?



$(x-h)^2 + (y-k)^2 \leq r^2$  **A.**  $\begin{cases} y < -x + 2 \\ (x-1)^2 + (y-2)^2 < 9 \end{cases}$

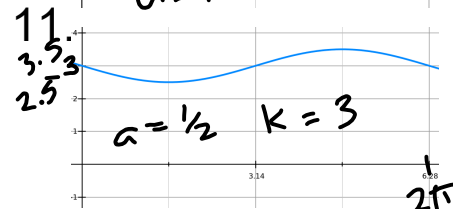
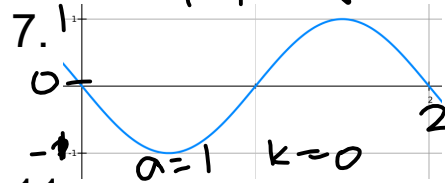
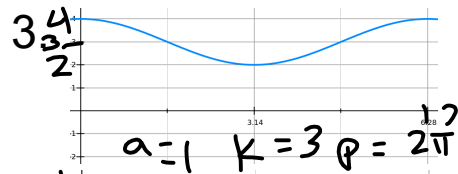
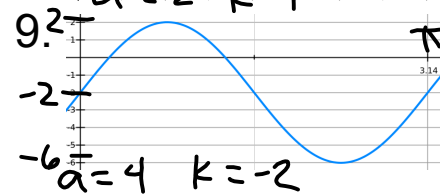
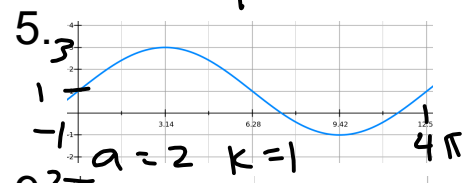
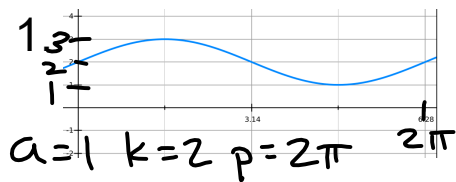
~~B.~~  $\begin{cases} y > -x + 2 \\ (x-1)^2 + (y-2)^2 < 9 \end{cases}$

~~C.~~  $\begin{cases} y > -x + 2 \\ (x-1)^2 + (y-2)^2 > 9 \end{cases}$

~~D.~~  $\begin{cases} y < -x + 2 \\ (x-1)^2 + (y-2)^2 > 9 \end{cases}$

~~E.~~  $\begin{cases} (y-2) < 3 \\ (x-1) > 3 \end{cases}$

## Homework 7.4 Solutions



13.  $-2\sin(2x)-1$

14.  $3\sin(1/2x)+1$

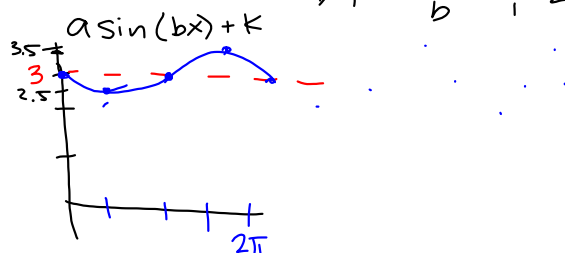
15.  $\sin(1/3x)+3$

16.  $-\sin(\pi x)-2$

17.  $4\cos(\pi/4x)+1$

18.  $2\cos(3x)$

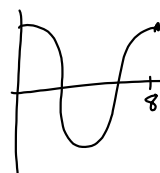
Homework 7.4 Questions  $a = \frac{1}{2}$   $k = 3$   
 1)  $-\frac{1}{2}\sin x + 3$   $b = 1$   
 $\text{per} = \frac{2\pi}{b} = \frac{2\pi}{1} = 2\pi$



17)  $a = 4$   
 $b = \frac{2\pi}{\text{per}} = \frac{2\pi}{8} = \frac{\pi}{4}$

$k = 1$

$4 \cos\left(\frac{\pi}{4}x\right) + 1$

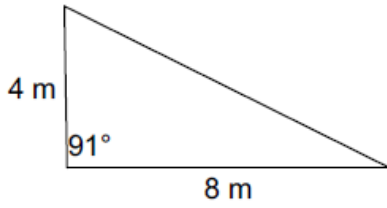


Today's Objectives:

Review for Unit 7 Test

Find the area of each figure. Round your answer to the nearest tenth.

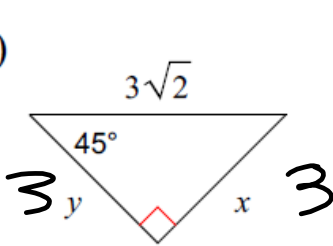
1)



$$\begin{aligned} \text{Area} &= \frac{1}{2} bc \sin A \\ &= \frac{1}{2} (4)(8) \sin(91) \\ &= 16.0 \text{ m}^2 \end{aligned}$$

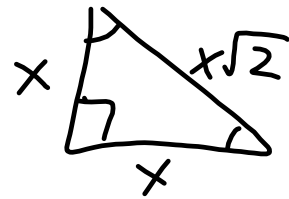
Find the missing side lengths. Leave your answers as radicals in simplest form.

3)

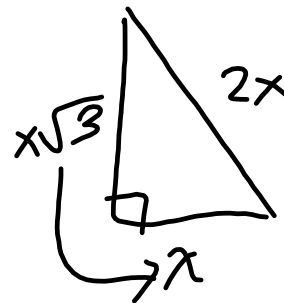
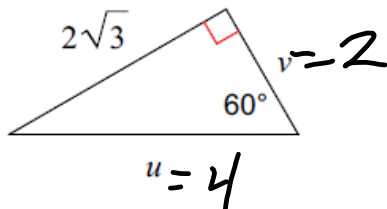


$$\frac{3\sqrt{2}}{\sqrt{2}}$$

$$\frac{2\sqrt{3}}{\sqrt{3}}$$



5)

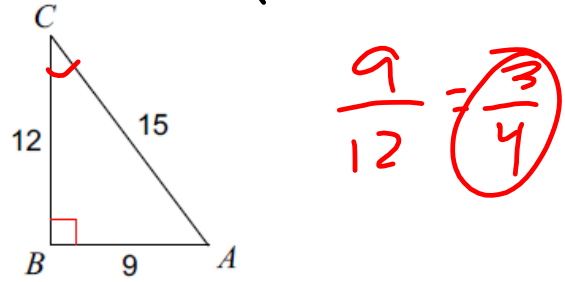
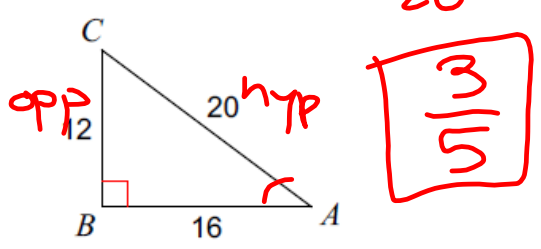


Find the value of each trigonometric ratio.

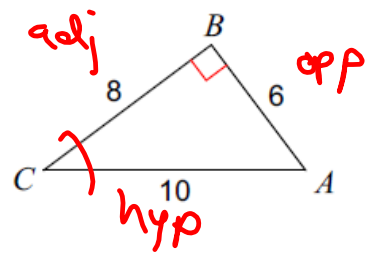
SOH  
CAH  
TOA

7)  $\sin A = \frac{\text{opp}}{\text{hyp}} = \frac{12}{20}$

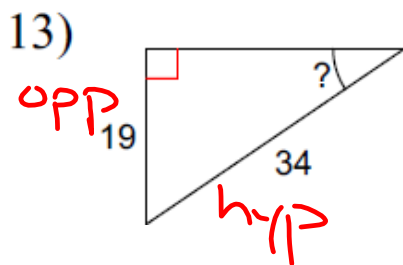
11)  $\tan C$



9)  $\cos C = \frac{8}{10} = \frac{4}{5}$

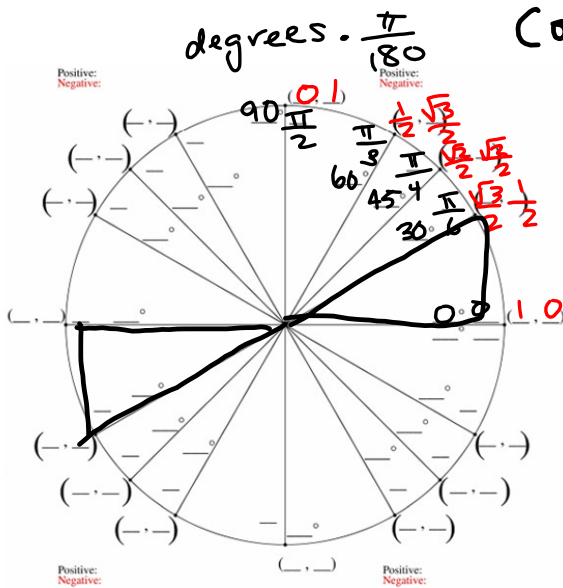


Find the measure of the indicated angle to the nearest degree.



$\sin^{-1}\left(\frac{19}{34}\right) = 33.977^\circ$

$\sin^{-1}\left(\frac{19}{34}\right) = \sin^{-1}\left(\frac{19}{34}\right)$



$\cos \theta = x$      $\sin \theta = y$

Use the unit circle to find the exact value of:

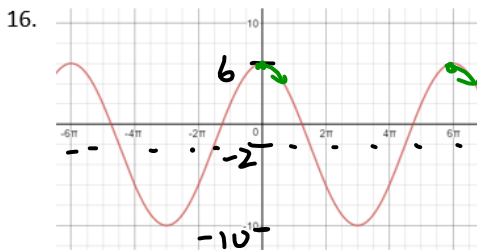
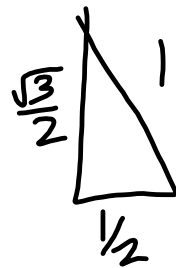
10.  $\sin \frac{\pi}{4}$

$\frac{\sqrt{2}}{2}$

11.  $\csc 330^\circ$

12.  $\cos \frac{7\pi}{6}$

$-\frac{\sqrt{3}}{2}$



$a \sin(bx) + k$

per =  $\frac{2\pi}{b}$

Amplitude:  $a = 8$

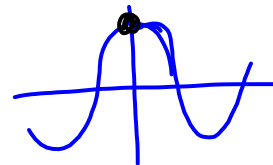
Period: per =  $6\pi$

Midline:  $k = -2$

Equation:  $8 \cos\left(\frac{1}{3}x\right) - 2$

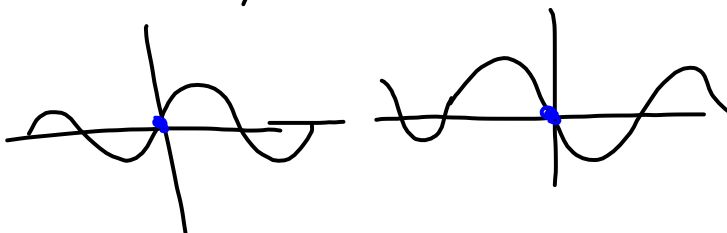
$b = \frac{2\pi}{\text{per}} = \frac{2\pi}{6\pi} = \frac{1}{3}$

$\cos(x)$

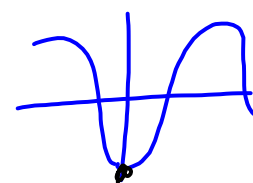


$\sin(x)$

$-\sin(x)$

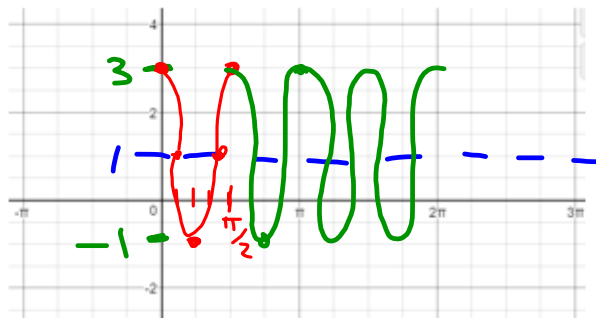


$-\cos(x)$



Graph the following equations

18.  $f(x) = 2 \cos(4x) + 1$



$$a = 2$$

$$k = 1$$

$$b = 4$$

$$\text{Per} = \frac{2\pi}{b} = \frac{2\pi}{4} = \frac{\pi}{2}$$