

Chapter 4 Practice TEST

Name Key

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Find the exact value of the real number y.

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

$\pi/3, 2\pi/3$

1) \_\_\_\_\_

Convert the radian measure to degree measure. Use the value of  $\pi$  found on a calculator and round answers to two decimal places.

2)  $\pi/5$

$\frac{\pi}{5} \cdot \frac{180}{\pi} = 36^\circ$

2) \_\_\_\_\_

Use the arc length formula and the given information to find the indicated quantity.

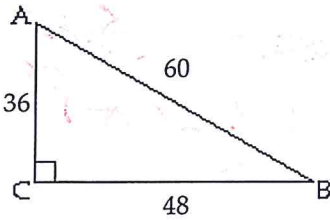
3)  $s = 12$  cm,  $\theta = 36^\circ$ ; find r

$\frac{1}{10} \frac{36}{360} \cdot 2 \cdot \pi \cdot r = 12$   
 $5 \cdot \frac{\pi r}{5} = 12.5$   
 $r = \frac{60}{\pi}$

3) \_\_\_\_\_

Find the exact values of the indicated trigonometric functions. Write fractions in lowest terms.

4)



$\pi r = 60$   
 $r = \frac{60}{\pi}$

4) \_\_\_\_\_

Find  $\sin A$  and  $\cos A$ .

$\sin A = \frac{48}{60} = \frac{4}{5}$

$\cos A = \frac{36}{60} = \frac{3}{5}$

Use a calculator to find the approximate value. Express your answer in degrees rounded to two decimal places.

5)  $\arcsin 0.72$

5) \_\_\_\_\_

.8

Solve.

- 6) A rotating beacon is located a distance  $d$  from a long wall. The distance  $d$  is given by  $d = 6 \tan 2\pi t$ , where  $t$  is the time measured in seconds since the beacon started rotating. Solve equation for  $t$ .

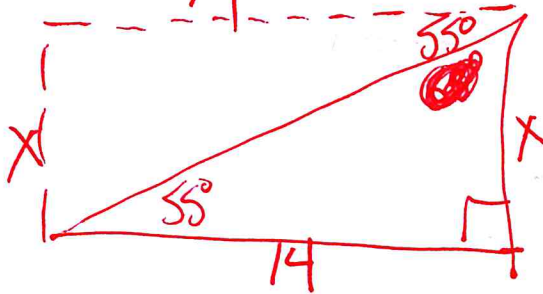
6) \_\_\_\_\_

$$\frac{\tan^{-1}\left(\frac{d}{6}\right)}{2\pi} = t$$

Solve the problem.

- 7) When sitting atop a tree and looking down at his pal Frank, the angle of depression of Mack's line of sight is  $55^\circ$ . If Joey is known to be standing 14 feet from the base of the tree, how tall is the tree (to the nearest foot)?

7) \_\_\_\_\_



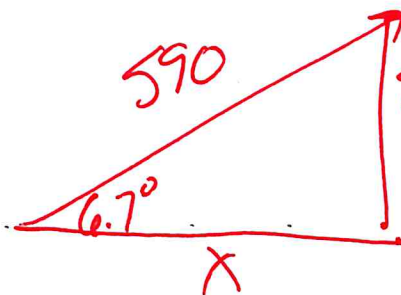
$$14 \cdot \tan 55 = X$$

~~$X = 9.8$~~   
 ~~$X = 20$~~

$X = 20$  ft

- 8) The air speed of an airplane is 590 km/hr and its angle of climb is  $6.7^\circ$ . What is its ground speed (to the nearest km/hr)?

8) \_\_\_\_\_



$$590 \cdot \cos 6.7^\circ = X$$

$585.97$  km  
 $= 586$  km/hr

Convert from degrees to radians. Use the value of  $\pi$  found on a calculator and round answers to four decimal places, as needed.

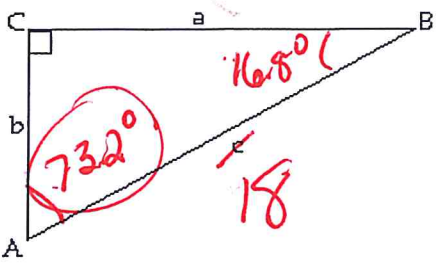
9)  $252^\circ$

$$252 \cdot \frac{\pi}{180} = \frac{63\pi}{45} = \frac{7\pi}{5}$$

9) \_\_\_\_\_

Solve the right triangle for all missing sides and angles to the nearest tenth.

10)



$c = 18$   
 $B = 16.8^\circ$

$$180 - 90 - 16.8 = 73.2^\circ$$

$$18 \cdot \sin 16.8 = \frac{b}{18} \cdot 18$$

$$5.2 = b$$

$$18 \cdot \cos 16.8 = \frac{a}{18} \cdot 18$$

$$a = 17.2$$

10) \_\_\_\_\_

Give the exact value.

11)  $\tan \frac{\pi}{4}$

$$\frac{\frac{\sqrt{2}}{2}}{\frac{\sqrt{2}}{2}} = 1$$

11) 1

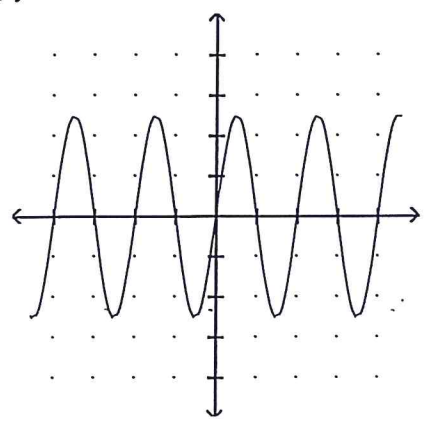
12)  $\sin 60^\circ$

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

Find the amplitude of the function.

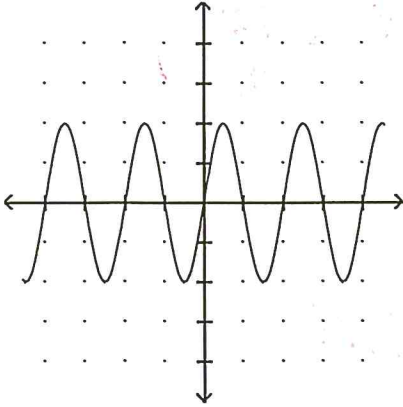
13)  $y = 2.5 \sin 8x$

13) 2.5



Find the period of the function.

14)  $y = 2 \sin 8x$

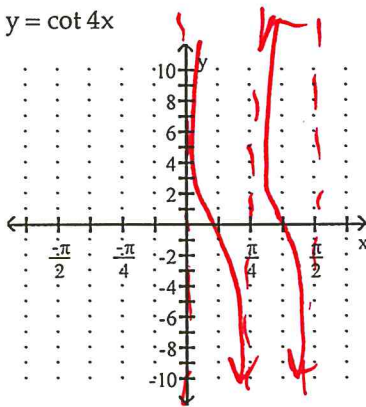


$\frac{2\pi}{8} = \frac{\pi}{4}$

14) \_\_\_\_\_

Graph the function.

15)  $y = \cot 4x$



$\frac{\pi}{4} = \text{period}$

15) \_\_\_\_\_