Name Key Period Date

PreCalc

Practice Test Ch. 4

Convert the angle to decimal degrees and round to the nearest hundredth of a degree.

1) 55°22′40″ 1) 55.38°

2) 280°27′29″ 2) 280.46°

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

3) $\frac{59}{18}\pi$ 3) 590°

4) −2.2853 4) −130.94°

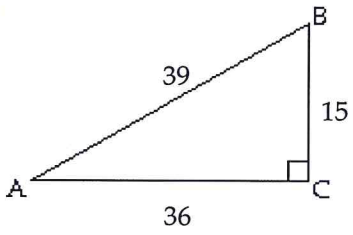
Use the arc length formula and the given information to find the indicated quantity.

5) s = 18 cm, θ = 54°; find r 5) $r = \frac{60}{\pi}$ cm

6) s = 2 m, r = 3 m; find θ 6) $\frac{2}{3}$ radians

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

7)

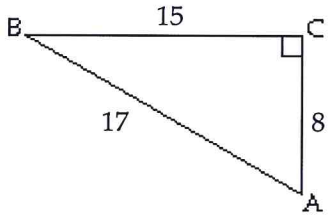


Find tan A and cot A.

tan A = 5/12

7) cot A = 12/5

8)



Find sec A and csc A.

sec A = 17/8

8) csc A = 17/15

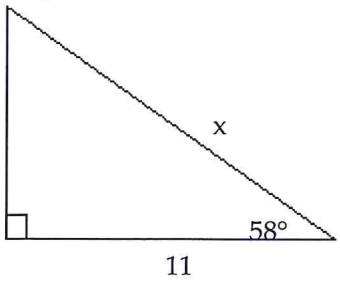
Solve the equation.

9) Solve cos θ = 1 for θ, where 0° ≤ θ ≤ 90°. 9) 0°

10) Solve tan θ = $\sqrt{3}$ for θ, where 0° ≤ θ ≤ 90°. 10) 60°

Solve for x. Round your answer to 2 decimal places.

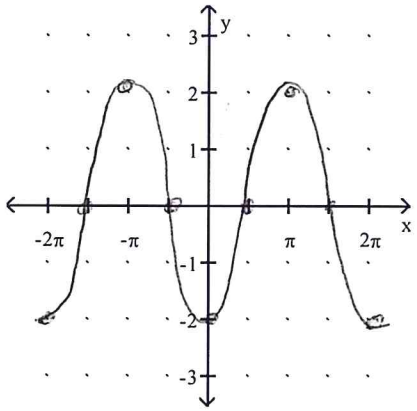
11)



11) 20.76

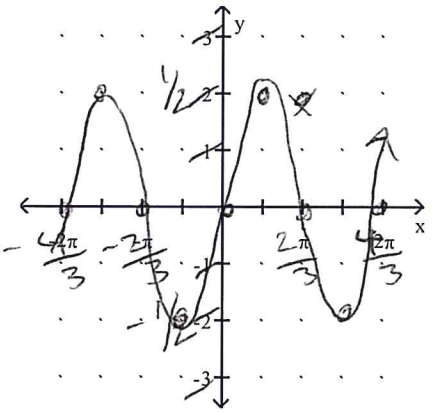
Graph the function.

12) $y = -2 \cos x$



12)

13) $y = \frac{1}{2} \sin \frac{3}{2}x$ $per = \frac{2\pi}{3/2} = \frac{4\pi}{3}$



13)

Find the specified quantity.

14) Find the period of $y = -2 \sin\left(8x + \frac{\pi}{2}\right)$. $per = \frac{2\pi}{8}$

14) $\pi/4$

15) Find the phase shift of $y = -4 - 3 \sin\left(5x - \frac{\pi}{3}\right)$.

$\left[5\left(x - \frac{\pi}{15}\right)\right]$

15) Left $\pi/15$

Use a calculator to find the approximate value of the expression. Express your answer in radians and round to three decimal places.

16) $\sin^{-1}(-0.7309)$ 16) $-.820$

17) $\csc^{-1}(1.4104)$ 17) 0.788

Solve the problem.

18) The air speed of an airplane is 670 km/hr and its angle of climb is 4.85°. What is its ground speed (to the nearest km/hr)? 18) 668 km/hr

19) From a boat on the lake, the angle of elevation to the top of a cliff is 12°50'. If the base of the cliff is 1366 feet from the boat, how high is the cliff (to the nearest foot)? 19) 311 ft

20) City X is 30 miles due south of City Y, and City Z is 10 miles due west of City X. What is the bearing of City Z from City Y (to the nearest tenth of a degree)? 20) $18.4°$ SW

21) When sitting atop a tree and looking down at his pal Joey, the angle of depression of Mack's line of sight is 38°32'. If Joey is known to be standing 39 feet from the base of the tree, how tall is the tree (to the nearest foot)? 21) 31 ft