



CURRICULUM AND INSTRUCTIONAL SERVICES
MATHEMATICS COMMON ASSESSMENT REVIEW
TRIGONOMETRY 342010

Name _____ Date _____

1. Convert $132^{\circ}58'22''$ to decimal degrees rounded to the nearest hundredth of a degree. 1. _____

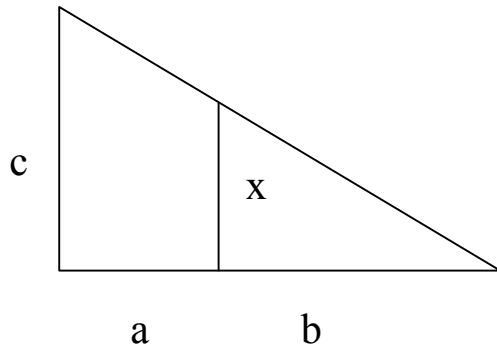
2. Convert 209.64° to degrees, minutes, and seconds. 2. _____

3. Find the measure of the smaller angle formed by the hands of a clock at 3:30. 3. _____

4. A tree casts a shadow 38 m long. At the same time, the shadow cast by a 34 centimeter tall statue is 69 cm long. Find the height of the tree to the nearest tenth. 4. _____

5. The triangles are similar. Find the missing side.

5. _____



$$\begin{aligned} a &= 20 \\ b &= 60 \\ c &= 44 \end{aligned}$$

6. Suppose that θ is in standard position and the given point is on the terminal side of θ . Give the exact value of all 6 trig functions for θ .

6. _____

(18, 24)

7. Evaluate the expression.

7. _____

$$7 \tan 360^\circ + 6 \csc 270^\circ$$

8. Find the value of the variable in the equation.

$$\sec(5\theta + 33^\circ) = \frac{1}{\cos(8\theta - 24^\circ)}$$

8. _____

9. Use fundamental identities to find the value of the trigonometric function.

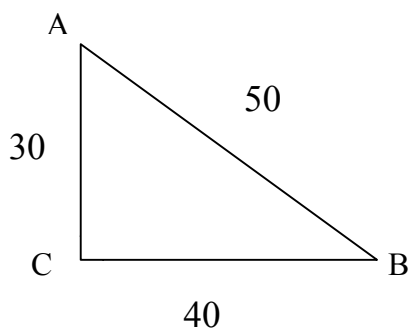
Find $\sin \theta$ if $\cos \theta = \frac{2}{3}$ and θ is in quadrant IV.

9. _____

- A) $-\frac{3}{2}$ B) $-\frac{\sqrt{5}}{3}$ C) $\frac{3\sqrt{7}}{7}$ D) $\frac{5}{4}$

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

10. _____



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

11. Without using a calculator, give the exact trigonometric function value with rational denominators. 11. _____

$$\sec 30^\circ$$

12. Write in terms of the cofunction of a complementary angle. 12. _____

$$\tan 76^\circ$$

13. Find a solution for the equation. Assume that all angles are acute. 13. _____

$$\sec(\theta + 3^\circ) = \csc(2\theta)$$

14. Find the reference angle for the given angle. 14. _____

$$A = 263.4^\circ$$

Find the exact function value if it exists.

15. $\cos 150^\circ$

- A) $\frac{\sqrt{3}}{2}$ B) $\frac{1}{2}$ C) $-\frac{\sqrt{3}}{2}$ D) $-\frac{\sqrt{2}}{2}$

15. _____

16. $\csc (-120^\circ)$

- A) $\frac{\sqrt{2}}{2}$ B) -2 C) $\frac{1}{2}$ D) $-\frac{2\sqrt{3}}{3}$

16. _____

17. Use a calculator to find the function value to four decimal places.
 $\sec (1.98)$

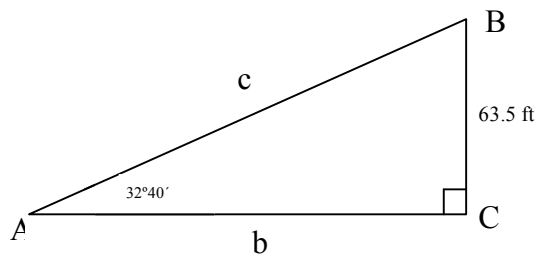
17. _____

18. Use a calculator to give the approximate value in degrees:
 $\tan \theta = .5774$

18. _____

19. Solve to find b . Round your answer to the hundredths place.

19. _____



20. Solve the right triangle.
 $a = 1.8$ in., $A = 48.4^\circ$, $C = 90^\circ$

20. _____

21. From the top of a vertical tower, 383 feet above the surface of the earth, the angle of depression to a doghouse is $28^{\circ}5'$. How far is it from the doghouse to the foot of the tower? Round your answer to the hundredths place.

21. _____

22. Convert 252° to radians. Leave your answer as a multiple of π .

22. _____

- A) $\frac{4\pi}{5}$ B) $\frac{14\pi}{5}$ C) $\frac{8\pi}{5}$ D) $\frac{7\pi}{5}$

23. Convert $\frac{4\pi}{9}$ to degrees. Round to the nearest hundredth.

23. _____

- A) 79.50° B) 80.00° C) 80.50° D) 81.00°

24. Find the exact circular function value.

24. _____

$$\tan \frac{-7\pi}{4}$$

- A) $\frac{\sqrt{3}}{3}$ B) -1 C) $\sqrt{3}$ D) 1

25. Find the length of an arc intercepted by a central angle θ in a circle of radius r . Round your answer to one decimal place.

25. _____

$$r = 46.85 \text{ ft}; \theta = \frac{\pi}{17} \text{ radians}$$

26. Find the area of a sector of a circle having the given radius r and central angle θ .

26. _____

$$r = 24.9 \text{ cm}; \theta = \frac{11\pi}{13} \text{ radians}$$

27. Find the exact value of s in the given interval that has the given circular function value.

27. _____

$$\left[\frac{\pi}{2}, \pi \right]; \cos s = -\frac{\sqrt{3}}{2}$$

A) $s = \frac{5\pi}{6}$ B) $s = \frac{2\pi}{3}$ C) $s = \frac{\pi}{6}$ D) $s = \frac{3\pi}{4}$

28. Perform the indicated operations and simplify the result.

28. _____

$$\frac{\sin \theta}{1 + \sin \theta} - \frac{\sin \theta}{1 - \sin \theta}$$

29. $\frac{\sec \theta \sin \theta}{\tan \theta} - 1$

29. _____

30. Verify that the equation is an identity.

30. _____

$$\cos x \csc x \tan x = 1$$

31. Use an appropriate identity to find the exact value of the expression.

31. _____

$$\cos(380^\circ) \cos(20^\circ) + \sin(380^\circ) \sin(20^\circ)$$

32. Find the exact value of the expression using the provided information.

32. _____

Find $\cos(A + B)$ given that $\cos A = -\frac{1}{6}$ with A in quadrant III

and $\cos B = -\frac{3}{5}$ with B in quadrant III.

33. Find the exact functional value. 33. _____

If $\cos A = -\frac{5}{13}$ and $\tan A < 0$, then find $\sin 2A$.

34. Find the exact value by using a half-angle identity. 34. _____

$\sin 75^\circ$

35. Find the exact value of the real number y . 35. _____

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

- A) $-\frac{\pi}{4}$ B) $\frac{3\pi}{4}$ C) $\frac{7\pi}{4}$ D) $\frac{\pi}{4}$

36. $y = \tan^{-1}(1)$ 36. _____

- A) $\frac{\pi}{4}$ B) $\frac{2\pi}{3}$ C) $\frac{\pi}{3}$ D) $\frac{3\pi}{4}$

37. Solve the equation exactly over the interval $[0, 360^\circ)$

37. _____

$$3\sin^2\theta - \sin\theta - 4 = 0$$

- A) $\{270^\circ\}$ B) $\{0^\circ\}$ C) $\{180^\circ\}$ D) $\{90^\circ\}$

38. Solve the triangle, if possible.

38. _____

$$\begin{aligned} A &= 30.0^\circ \\ a &= 15.30 \\ b &= 30.6 \end{aligned}$$

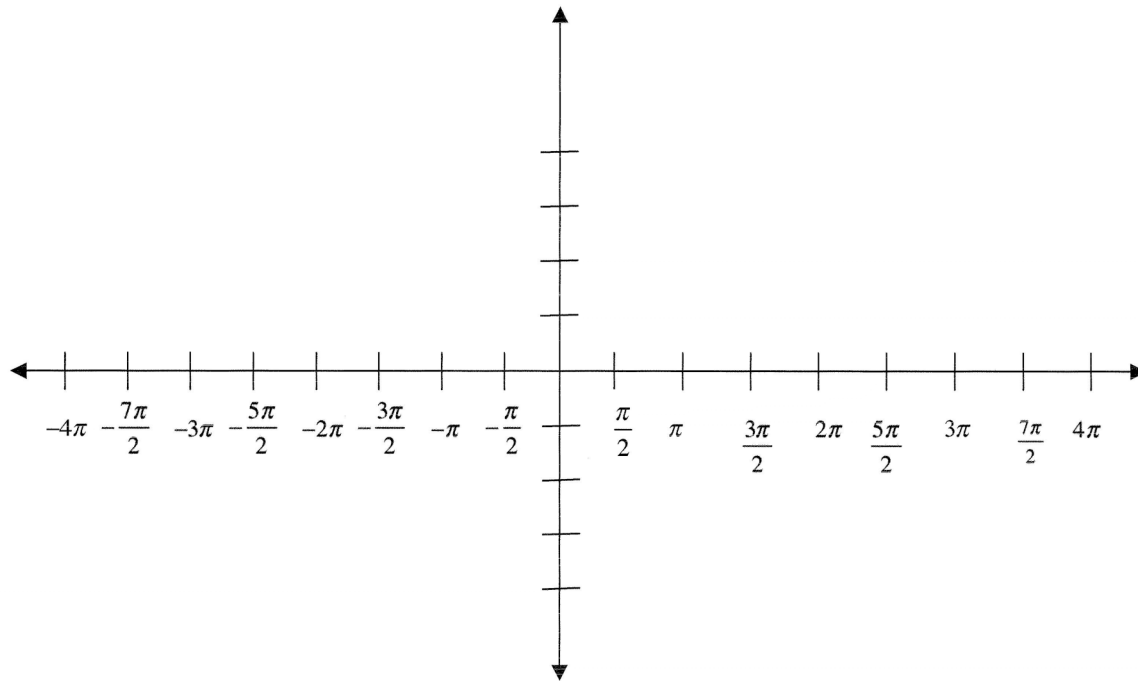
39. Find the missing parts of the triangle.

39. _____

$$\begin{aligned} C &= 114.4^\circ \\ a &= 5.70 \text{ km} \\ b &= 10.96 \text{ km} \end{aligned}$$

40. Graph the following equation over two periods. State the amplitude, period, phase shift, and vertical shift.

$$y = 2 + 3\sin(2x - \pi)$$



Amplitude: _____

Period: _____

Phase shift: _____

Vertical shift: _____