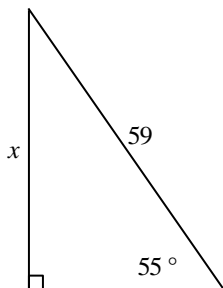


## Trig Test Prep/Review

There are MANY more questions on this test prep/review than will be on your test. The test is planned for Wednesday, February 27<sup>th</sup>. Although many questions here are multiple choice, that will probably not be the case for your test. Be sure you can DO the problems, not just guess correctly. If you have any questions about this review, be sure to ask your teacher ASAP. Good Luck! Mrs. Kramer ☺

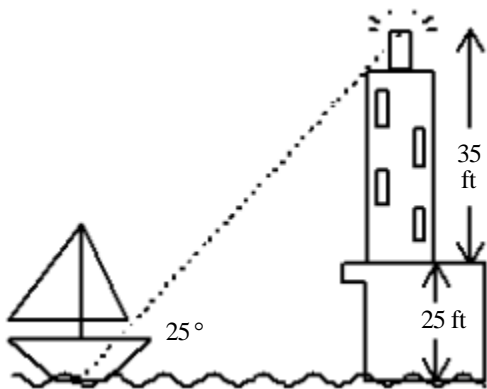
**14.3.1**(Geometry): I can use right triangle trig ratios (sine, cosine, tangent) to find missing side lengths and angle measurements.

- \_\_\_\_\_ 1. (1 point)  
Find the length of  $x$ .



- a. 33.8                      b. 48.3                      c. 84.3                      d. 72.0

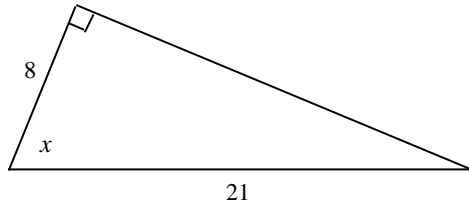
- \_\_\_\_\_ 2. (1 point)  
The line of sight from a small boat to the light at the top of a 35-foot lighthouse built on a cliff 25 feet above the water makes a  $25^\circ$  angle with the water. To the nearest foot, how far is the boat from the cliff?



Drawing is not to scale.

- a. 141 feet                      b. 128 feet                      c. 27 feet                      d. 75 feet

3. (1 point)  
Find the measure of  $x$  in the right triangle.



- a.  $22.4^\circ$       b.  $67.6^\circ$       c.  $20.9^\circ$       d.  $69.1^\circ$

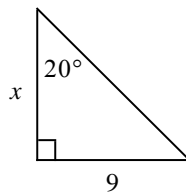
4. (1 point)  
Find the angle measure to the nearest tenth of a degree:  $\theta = \tan^{-1}7.9321$

- a.  $7.2^\circ$       b.  $82.8^\circ$       c.  $1.4^\circ$       d.  $0.1^\circ$

5. (1 point)  
Find the angle measure to the nearest tenth of a degree:  $\theta = \sin^{-1}0.2026$

- a.  $0.2^\circ$       b.  $11.7^\circ$       c.  $78.3^\circ$       d.  $1.4^\circ$

6. (1 point)



Not drawn to scale

- a. 3.3      b. 3.1      c. 24.7      d. 8.5

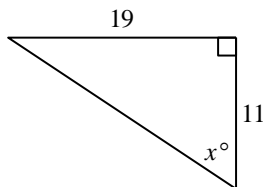
7. (1 point)  
Which of the following is NOT true for all values of  $\theta$ ?

- a.  $\cos \theta = \cos (90 + \theta)$       c.  $\tan \theta = \frac{\sin \theta}{\cos \theta}$   
b.  $(\cos \theta)^2 + (\sin \theta)^2 = 1$       d.  $\sin \theta = \cos (90 - \theta)$

8. (1 point)

Fill in the blank:  $\frac{\sin 4^\circ}{\cos 4^\circ} = \tan$  \_\_\_\_\_

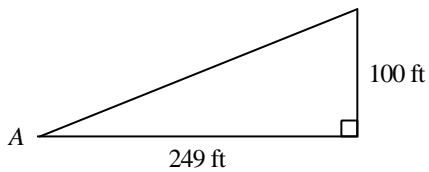
9. (1 point)



Not drawn to scale

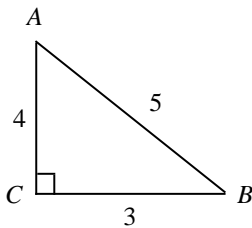
- a. 30      b. 60      c. 70      d. 85

10. (1 point)  
A large totem pole in the state of Washington is 100 feet tall. At a particular time of day, the totem pole casts a 249-foot-long shadow. Find the measure of  $\angle A$  to the nearest degree.



- a.  $68^\circ$                       b.  $45^\circ$                       c.  $35^\circ$                       d.  $22^\circ$

11. (1 point)  
Write the ratios for  $\sin A$  and  $\cos A$ .

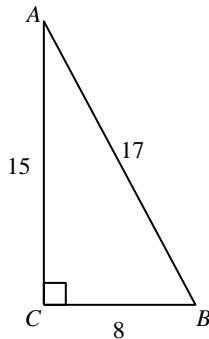


Not drawn to scale

- a.  $\sin A = \frac{3}{5}, \cos A = \frac{4}{5}$                       c.  $\sin A = \frac{3}{4}, \cos A = \frac{4}{5}$   
b.  $\sin A = \frac{4}{5}, \cos A = \frac{3}{5}$                       d.  $\sin A = \frac{3}{5}, \cos A = \frac{4}{3}$

12. (1 point)  
What is the value of  $\sin 43^\circ$  to the nearest ten-thousandth?  
a. 0.9325                      c. 1.4663  
b. 0.7314                      d. 0.682

13. (1 point)  
What is  $\cos B$  for the triangle shown?



- a.  $\frac{8}{17}$                       b.  $\frac{15}{17}$                       c.  $\frac{8}{15}$                       d.  $\frac{17}{8}$

14. (3 points)  
An airplane is flying at an altitude of 11,000 feet. The pilot wants to make a smooth final descent to the runway at an angle of depression of  $5^\circ$ . How far from the runway should the pilot begin the descent? (3 pts: 1 point for a diagram, 1 pt for correct setup, 1 pt for correct answer)

15. (3 points)  
A wheelchair ramp is to be built with a slope  $\frac{3}{28}$ . What angle will the ramp make with the horizontal? (3 pts: 1 point for a diagram, 1 pt for correct setup, 1 pt for correct answer)

16. (1 point)  
Fill in the blank:  $\sin 81^\circ = \cos$  \_\_\_\_\_

**13.2.1 (Geometry):** I can use sine and cosine to determine points around a unit circle.

- \_\_\_\_\_ 17. (1 point)  
Find the exact value of  $\sin 120^\circ$ .

a.  $\sin = \frac{\sqrt{3}}{2}$

c.  $\sin = \frac{1}{2}$

b.  $\sin = -\frac{\sqrt{3}}{2}$

d.  $\sin = -\frac{1}{2}$

- \_\_\_\_\_ 18. (1 point)  
Find the exact value of  $\sin\left(-\frac{4\pi}{3}\right)$  radians.

a.  $\frac{1}{2}$

b.  $\sqrt{3}$

c. 1

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

- \_\_\_\_\_ 19. (1 point)  
Find the exact value of  $\cos\left(-\frac{7\pi}{4}\right)$  radians.

a.  $\frac{\sqrt{2}}{2}$

b.  $\frac{1}{2}$

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

d.  $-\frac{1}{2}$

- \_\_\_\_\_ 20. (1 point)  
Is  $\cos 314^\circ$  positive, negative, or zero?

a. Positive

b. Negative

c. Zero

21. (1 point)  
What is the value of  $\sin 390^\circ$ ?

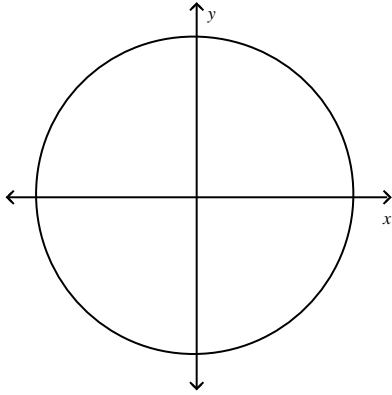
22. (4 points)  
Explain how to find the exact value of  $\sin 600^\circ$  using your unit circle.

23. (1 point)  
Find the exact value of  $\cos 30^\circ$ .

24. (1 point)  
Find the exact value of  $\sin(-225^\circ)$ .

25. (1 point)  
Is  $\sin 331^\circ$  positive, negative, or zero?  
a. Positive                      b. Negative                      c. Zero

26. (1 point)  
On the unit circle below, approximate the location of  $P = (\cos 320^\circ, \sin 320^\circ)$



**13.3.2 (Geometry):** I can convert degrees to radians and vice versa

27. (1 point)  
Convert  $320^\circ$  to radians.  
a.  $\frac{16\pi}{9}$                       b.  $\frac{9\pi}{16}$                       c.  $\frac{9}{16\pi}$                       d.  $\frac{16}{9\pi}$

28. (1 point)  
Convert  $\frac{3\pi}{5}$  radians to degrees.  
a.  $108\pi^\circ$                       b.  $\frac{\pi}{300}$                       c.  $108^\circ$                       d.  $1.88^\circ$

29. (1 point)  
Find the degree measure of an angle of 4.23 radians.  
a.  $62^\circ$                       b.  $242^\circ$                       c.  $118^\circ$                       d.  $28^\circ$

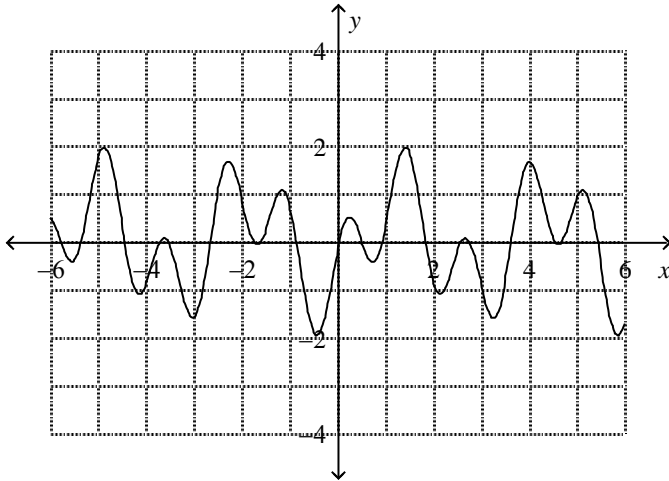
30. (1 point)  
Find the radian measure of an angle of  $110^\circ$ .  
a.  $\frac{11}{18\pi}$                       b.  $\frac{11\pi}{18}$                       c.  $\frac{18}{11\pi}$                       d.  $\frac{18\pi}{11}$

31. (1 point)  
What is  $100^\circ$  in radians?

- a.  $\frac{9\pi}{5}$
- b.  $\frac{5\pi}{9}$
- c.  $\frac{\pi}{5}$
- d.  $\frac{\pi}{9}$

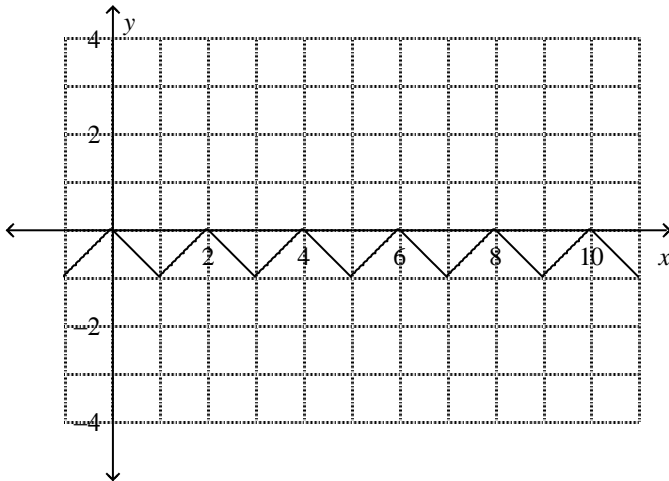
**13.4.1** (Functions): I can identify a periodic function, the length of its cycle, and its amplitude. I can use these basic properties to model a sine curve with a graph and an equation.

32. (1 point)  
Determine whether the function shown below *is* or *is not* periodic. If it is, find the period.



- a. periodic; about 6
- b. periodic; about 3
- c. periodic; about 12
- d. not periodic

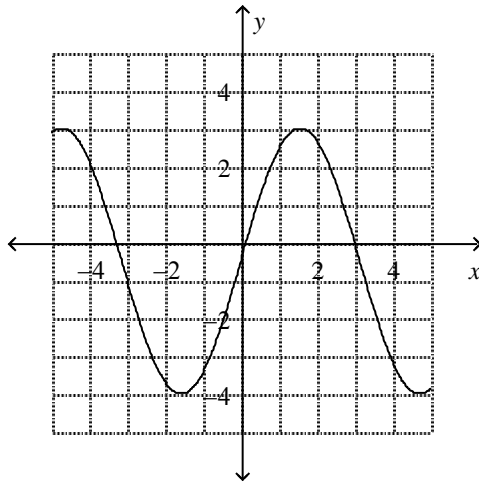
33. (1 point)  
Find the period and the amplitude of the periodic function.



- a. 1, -1
- b. 1, 0.5
- c. 2, 0.5
- d. 0.5, 2

34. (1 point)

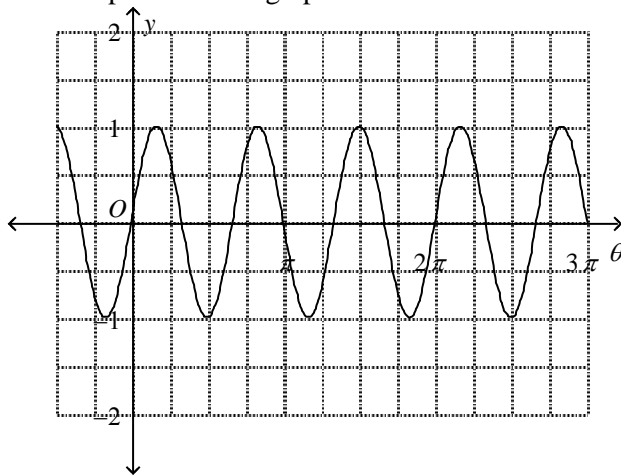
Find the amplitude of the periodic function.



- a. 3.5                      b. 3                      c. 7                      d. 1.75

35. (1 point)

Find the period of the graph shown below.



- a.  $2\pi$                       b.  $\frac{2}{3}\pi$                       c.  $\frac{1}{2}\pi$                       d.  $4\pi$

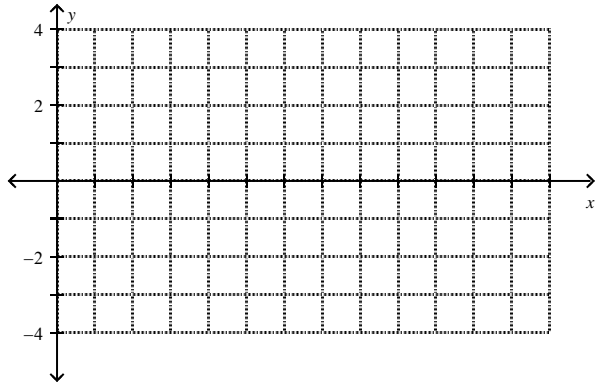
36. (1 point)

A particular sound wave can be graphed using the function  $y = -3 \sin x$ . Find the amplitude and period of the function.

- a. amplitude = 3, period =  $2\pi$                       c. amplitude =  $2\pi$ , period = 3  
 b. amplitude =  $\frac{1}{2}\pi$ , period = -3                      d. amplitude = -3, period =  $\frac{1}{2}$

37. (1 point)

An electromagnetic wave is modeled with the function  $y = \frac{3}{2} \sin \frac{1}{4} \theta$ . Sketch a graph of this function.





## Unit Circle and Radians Quick Check

### Answer Section

1. ANS: B                   PTS: 1                   REF: 14-3 Right Triangles and Trigonometric Ratios  
OBJ: 14-3.1 Finding the Lengths of Sides in a Right Triangle
2. ANS: B                   PTS: 1                   REF: 14-3 Right Triangles and Trigonometric Ratios  
OBJ: 14-3.1 Finding the Lengths of Sides in a Right Triangle
3. ANS: B                   PTS: 1                   REF: 14-3 Right Triangles and Trigonometric Ratios  
OBJ: 14-3.2 Finding the Measures of Angles in a Right Triangle
4. ANS: B                   PTS: 1                   REF: 14-3 Right Triangles and Trigonometric Ratios  
OBJ: 14-3.2 Finding the Measures of Angles in a Right Triangle
5. ANS: B                   PTS: 1                   REF: 14-3 Right Triangles and Trigonometric Ratios  
OBJ: 14-3.2 Finding the Measures of Angles in a Right Triangle
6. ANS: C                   PTS: 1                   REF: 8-3 The Tangent Ratio  
OBJ: 8-3.1 Using Tangents in Triangles
7. ANS: A                   PTS: 1
8. ANS: 4 degrees  
  
PTS: 1
9. ANS: B                   PTS: 1                   REF: 8-3 The Tangent Ratio  
OBJ: 8-3.1 Using Tangents in Triangles
10. ANS: D                   PTS: 1                   REF: 8-3 The Tangent Ratio  
OBJ: 8-3.1 Using Tangents in Triangles
11. ANS: A                   PTS: 1                   REF: 8-4 Sine and Cosine Ratios  
OBJ: 8-4.1 Using Sine and Cosine in Triangles
12. ANS: D                   PTS: 1                   REF: 10-6 Trigonometric Ratios  
OBJ: 10-6.1 To find and use trigonometric ratios                   DOK: DOK 1
13. ANS: A                   PTS: 1                   REF: 10-6 Trigonometric Ratios  
OBJ: 10-6.1 To find and use trigonometric ratios                   DOK: DOK 1
14. ANS:  
125,731 feet  
  
PTS: 3
15. ANS:  
6°  
  
PTS: 3
16. ANS: 9 degrees  
  
PTS: 1
17. ANS: B                   PTS: 1                   REF: 13-2 Angles and the Unit Circle  
OBJ: 13-2.2 To find coordinates of points on the unit circle                   DOK: DOK 2
18. ANS: D                   PTS: 1                   REF: 13-3 Radian Measure  
OBJ: 13-3.1 Using Radian Measure
19. ANS: A                   PTS: 1                   REF: 13-3 Radian Measure  
OBJ: 13-3.1 To use radian measure for angles                   DOK: DOK 2
20. ANS: A                   PTS: 1
21. ANS:

0.5

PTS: 1

22. ANS:

$600 - 360 = 240^\circ$ , so find 240 degrees on the unit circle. The value of sine is the y-coordinate at that point, so

$$\sin 600^\circ = \frac{-\sqrt{3}}{2}$$

PTS: 4

23. ANS:

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

PTS: 1

24. ANS:

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

PTS: 1

25. ANS: B

PTS: 1

26. ANS:

Located in quadrant 4

PTS: 1

27. ANS: A

PTS: 1

REF: 13-3 Radian Measure

OBJ: 13-3.1 Using Radian Measure

28. ANS: C

PTS: 1

REF: 13-3 Radian Measure

OBJ: 13-3.1 Using Radian Measure

29. ANS: B

PTS: 1

REF: 13-3 Radian Measure

OBJ: 13-3.1 Using Radian Measure

30. ANS: B

PTS: 1

REF: 13-3 Radian Measure

OBJ: 13-3.1 To use radian measure for angles

DOK: DOK 1

31. ANS: B

PTS: 1

32. ANS: A

PTS: 1

REF: 13-1 Exploring Periodic Data

OBJ: 13-1.1 Identifying Periodic Functions

33. ANS: C

PTS: 1

REF: 13-1 Exploring Periodic Data

OBJ: 13-1.2 Finding the Amplitude of a Periodic Function

34. ANS: A

PTS: 1

REF: 13-1 Exploring Periodic Data

OBJ: 13-1.2 Finding the Amplitude of a Periodic Function

35. ANS: B

PTS: 1

REF: 13-4 The Sine Function

OBJ: 13-4.1 Interpreting Sine Functions

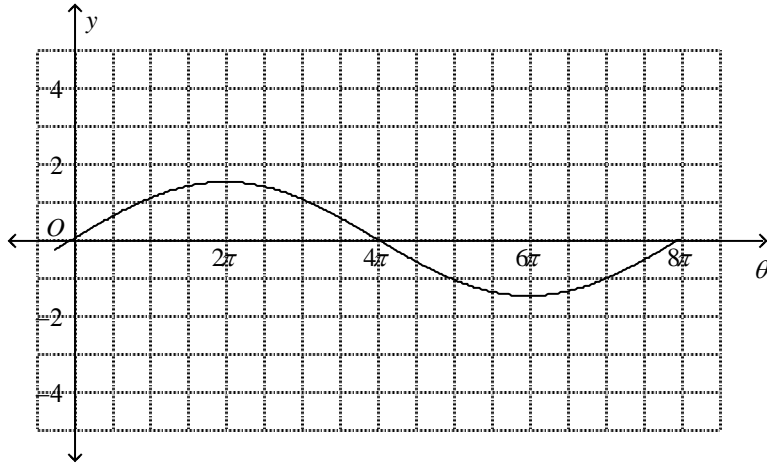
36. ANS: A

PTS: 1

REF: 13-4 The Sine Function

OBJ: 13-4.1 Interpreting Sine Functions

37. ANS:



PTS: 1

REF: 13-4 The Sine Function

OBJ: 13-4.2 Graphing Sine Functions