Trigonometric Functions

Review for Test 5

Convert the angle from degrees to radians. Express the answer as a multiple of π.

1) 324°

2) -630°

Convert the angle from radians to degrees.

3) $-\frac{5\pi}{4}$

4) $\frac{4\pi}{7}$

Determine the quadrant in which the terminal side lies.

5) 54°

6) $\frac{9\pi}{4}$

7) $-\frac{35\pi}{9}$

8) Find the length of the arc on the circle of radius 11 meters intercepted by a central angle of 85°. Round your answer to three decimal places.

9) A wheel with a 34-inch radius is marked at two points on the rim. The distance between the marks along the wheel is found to be 19 inches. What is the angle (to the nearest tenth of a degree) between the radii to the two marks?

10) A 26-foot ladder is leaning against the side of a building. If the ladder makes an angle of 22°58' with the side of the building, how far is the bottom of the ladder from the base of the building?

Evaluate without using a calculator.

11) $\sin\theta$, if $\cos\theta = \frac{4}{9}$, and $\tan\theta < 0$.

12) $\cos\theta$, if $\tan\theta = -\frac{15}{7}$, and $\sin\theta > 0$.

13) $\sin\theta$, if $\tan\theta = \frac{21}{5}$, and $\cos\theta < 0$.

14) $\tan\theta$, if $\cos\theta = \frac{6}{11}$, and $\sin\theta < 0$.

Find the exact value.

15) $\cos\theta = \frac{1}{2}$ in Quadrant I

a) $\cos(180 + \theta)$

b) $\cos(180 - \theta)$

c) $\cos(90 - \theta)$

d) $\cos(-\theta)$

e) $\sin\theta$

f) $\tan\theta$

Evaluate the trigonometric function.

16) $\tan 210°$

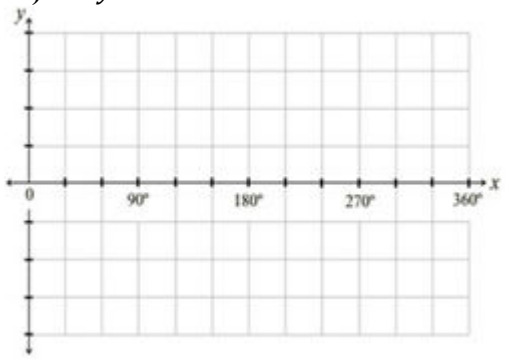
17) $\sin 315°$

18) $\cos \frac{7\pi}{4}$

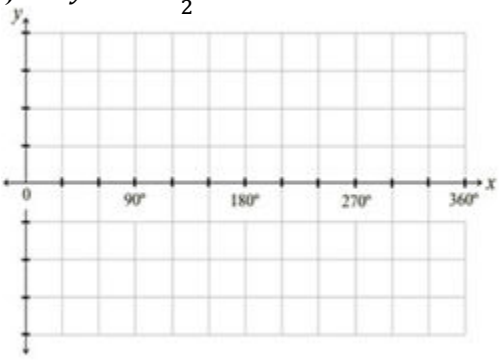
19) $\sin \frac{11\pi}{6}$

Graph each function using degrees. Identify the amplitude, period, phase shift, and vertical shift.

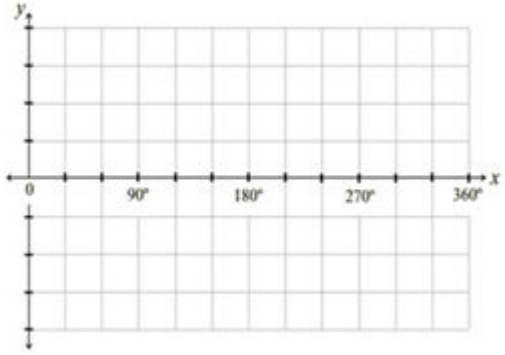
20) $y = 2\cos\theta - 1$



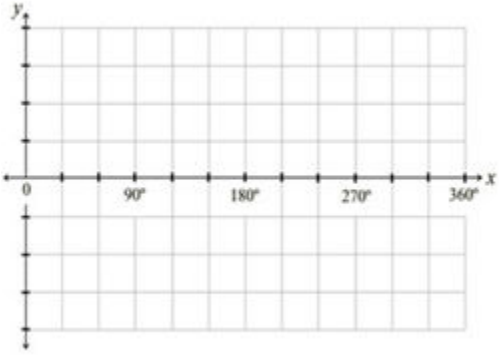
21) $y = \cos\frac{\theta}{2}$



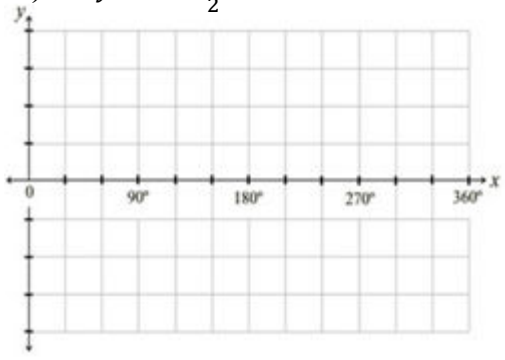
22) $y = 4\sin 3\theta + 1$



23) $y = 3\sin(\theta - 30)$



24) $y = \tan\frac{\theta}{2}$



25) $y = \tan(\theta + 45)$