

4 Chapter Test

See www.CalcChat.com for worked-out solutions to odd-numbered exercises.

Take this test as you would take a test in class. After you are finished, check your work against the answers given in the back of the book.

- Consider an angle that measures $\frac{5\pi}{4}$ radians.
 - Sketch the angle in standard position.
 - Determine two coterminal angles (one positive and one negative).
 - Convert the angle to degree measure.
- A truck is moving at a rate of 90 kilometers per hour, and the diameter of its wheels is 1.25 meters. Find the angular speed of the wheels in radians per minute.
- Find the exact values of the six trigonometric functions of the angle θ shown in the figure.
- Given that $\tan \theta = \frac{7}{2}$ and θ is an acute angle, find the other five trigonometric functions of θ .
- Determine the reference angle θ' of the angle $\theta = 255^\circ$ and sketch θ and θ' in standard position.
- Determine the quadrant in which θ lies if $\sec \theta < 0$ and $\tan \theta > 0$.
- Find two exact values of θ in degrees ($0 \leq \theta < 360^\circ$) if $\cos \theta = -\sqrt{2}/2$.
- Use a calculator to approximate two values of θ in radians ($0 \leq \theta < 2\pi$) if $\csc \theta = 1.030$. Round your answer to two decimal places.
- Find the five remaining trigonometric functions of θ , given that $\cos \theta = -\frac{3}{5}$ and $\sin \theta > 0$.

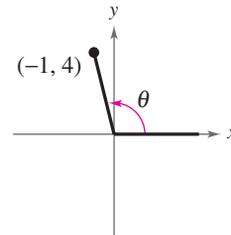


Figure for 3

In Exercises 10–15, sketch the graph of the function. (Include two full periods.)

- $g(x) = -2 \sin\left(x - \frac{\pi}{4}\right)$
- $f(x) = \frac{1}{2} \tan 4x$
- $f(x) = \frac{1}{2} \sec(x - \pi)$
- $f(x) = 2 \cos(\pi - 2x) + 3$
- $f(x) = 2 \csc\left(x + \frac{\pi}{2}\right)$
- $f(x) = 2 \cot\left(x - \frac{\pi}{2}\right)$

In Exercises 16 and 17, use a graphing utility to graph the function. If the function is periodic, find its period.

- $y = \sin 2\pi x + 2 \cos \pi x$
- $y = 6e^{-0.12t} \cos(0.25t), \quad 0 \leq t \leq 32$
- Find a , b , and c for the function $f(x) = a \sin(bx + c)$ such that the graph of f matches the graph at the right.
- Find the exact value of $\tan(\arccos \frac{2}{3})$ without using a calculator.

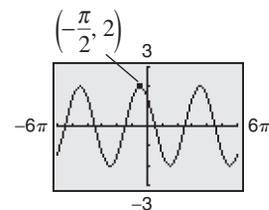


Figure for 18

In Exercises 20–22, use a graphing utility to graph the function.

- $f(x) = 2 \arcsin\left(\frac{1}{2}x\right)$
- $f(x) = 2 \arccos x$
- $f(x) = \arctan \frac{x}{2}$
- A plane is 160 miles north and 110 miles east of an airport. What bearing should be taken to fly directly to the airport?