1. Convert from degrees to radians and simplify.
   (a) 120°
   (b) 225°
   (c) −30°
   (d) 300°
   (e) 540°
   (f) 2°

2. Convert from radians to degrees and simplify.
   (a) π/3
   (b) π/12
   (c) 7π/4
   (d) 3.5π
   (e) −3π/2
   (f) 2

3. Evaluate the following quantities.
   (a) \( \sin \left( \frac{3\pi}{2} \right) \)
   (b) \( \cos \left( \frac{7\pi}{6} \right) \)
   (c) \( \tan \left( \frac{5\pi}{6} \right) \)
   (d) \( \sin \left( -\frac{7\pi}{2} \right) \)
   (e) \( \cos \left( -\frac{3\pi}{4} \right) \)
   (f) \( \tan \left( 18\pi \right) \)
   (g) \( \cot \left( \frac{2\pi}{3} \right) \)
   (h) \( \sec \left( \frac{2\pi}{3} \right) \)
   (i) \( \csc \left( \frac{2\pi}{3} \right) \)

4. Determine real numbers \( a \) and \( b \) so that the expression \( 8 \sin^2 \theta + 2 \cos^2 \theta \) can be rewritten as \( a \sin^2 \theta + b \).

5. Determine real numbers \( a \) and \( b \) so that the expression \( 2 \tan^2 \theta + 3 \sec^2 \theta \) can be rewritten as \( a \tan^2 \theta + b \).

6. Simplify the expression \( \cot^2 \theta - \csc^2 \theta \).
7. Determine if the following functions are even, odd or neither.

(a) \( f(\theta) = \cos \theta \)
(b) \( g(t) = \sin t \)
(c) \( h(\alpha) = \tan \alpha \)
(d) \( F(x) = \cot x \)
(e) \( v(x) = \sec x \)
(f) \( f(x) = \csc x \)
(g) \( g(\beta) = \beta^4 \sin \beta \)
(h) \( h(x) = \sin^2 x \tan x \)
(i) \( w(x) = (\sin x + \cos x)^2 \)

8. For all \( \theta \), the quantity \( \sin (\pi + \theta) \) is equivalent to which one of the following?

(a) 0
(b) 1
(c) \( \sin \theta \)
(d) \( -\sin \theta \)
(e) \( \cos \theta \)
(f) \( -\cos \theta \)

9. For all \( \theta \), the quantity \( \cos (\pi/2 + \theta) \) is equivalent to which one of the following?

(a) 0
(b) 1
(c) \( \sin \theta \)
(d) \( -\sin \theta \)
(e) \( \cos \theta \)
(f) \( -\cos \theta \)

10. Carefully sketch a graph of each of the following functions. Show more than one period for each function and include \( x \)-intercepts and \( y \)-intercepts.

(a) \( f(x) = \sin x \)
(b) \( f(x) = \cos x \)
(c) \( f(x) = \tan x \)
(d) \( f(x) = \cot x \)
(e) \( f(x) = \sec x \)
(f) \( f(x) = \csc x \)
(g) \( f(x) = 2 \sin (x - \pi) \)
(h) \( f(x) = 1 - \tan x \)
(i) \( f(x) = 5 + 2 \cos x \)