Section 5.5: Graphs of the Trigonometric Functions

1) The Sine function:
   
   Ex: Graph the following
   
   a) $y = \sin x$ ,   b) $y = \sin(x - \frac{\pi}{4})$

2) The Cosine function
   
   Ex: Graph the following
   
   a) $y = \cos x$ ,   b) $y = 2 \cos x$ ,   c) $y = \cos 2x$ ,   d) $y = \cos \frac{x}{2}$ ,   e) $y = -\cos(x + \frac{\pi}{6})$

3) The Tangent function
   
   Ex: Graph the following
   
   a) $y = \tan x$ ,   b) $y = -\tan(x + \frac{\pi}{3})$

4) The Cotangent function
   
   Ex: Graph the following
   
   a) $y = \cot x$ ,   b) $y = -\cot(x - \pi)$
Ex:

1) Select all the equations that are equivalent to \( y = \sec x \)

   a) \( y = \csc(x - \frac{3\pi}{2}) \)
   
   b) \( y = \sec(x - \pi) \)
   
   c) \( y = \csc(x + \frac{\pi}{2}) \)
   
   d) \( y = \sec(x - \frac{\pi}{2}) \)
   
   e) \( y = \sec(x - 2\pi) \)
   
   f) \( y = \csc(x + \frac{3\pi}{2}) \)

2) Select all the equations that are equivalent to \( y = -\cot x \)

   a) \( y = \tan(x - \frac{3\pi}{2}) \)
   
   b) \( y = -\tan(x + \frac{3\pi}{2}) \)
   
   c) \( y = -\cot(x - \pi) \)
   
   d) \( y = \tan(x + \frac{\pi}{2}) \)
   
   e) \( y = \cot(x - \frac{\pi}{2}) \)
   
   f) \( y = \cot(x - 2\pi) \)
Ex: Select all the choices that match the given graph.

1)

a) \( y = \tan(x - \frac{\pi}{2}) \)

b) \( y = -\cot(x - \pi) \)

c) \( y = -\tan(x + \frac{3\pi}{2}) \)

d) \( y = \tan(x + \frac{\pi}{2}) \)

2)

a) \( y = \sin(x - \frac{3\pi}{2}) \)

b) \( y = \cos(x - 2\pi) \)

c) \( y = -\sin(x + \frac{\pi}{2}) \)

d) \( y = \cos(x - \pi) \)