Find the exact values of the following trigonometric expressions.

a) $\sin(-225^\circ)$
b) $\cos(600^\circ)$
c) $\tan(-\frac{\pi}{6})$
d) $\sin\left(\frac{7\pi}{3}\right)$
e) $\cos\left(\frac{3\pi}{2}\right)$

Check your answers on Desmos :)
Center B: Solving Trigonometric Equations

Solve for \( x \), given the interval \( 0 \leq x < 2\pi \)

a) \( \cos \theta + 1 = 0 \)

b) \( 2\sin \theta + \sqrt{3} = 0 \)

c) \( 2\cos \theta - \sqrt{3} = 0 \)

Answers to Center A

a) \( \frac{\sqrt{3}}{2} \)  b) \(-\frac{1}{2}\)  c) \(-\frac{\sqrt{3}}{3}\)  d) \(\frac{\sqrt{3}}{2}\)  e) 0
Evaluate the trigonometric function given the information below.

a) If $\sin \theta = \frac{5}{13}$ and $\pi < \theta < \frac{\pi}{2}$, find $\cos \theta$.

b) If $\tan \theta = -\frac{4}{3}$ and $\frac{3\pi}{2} < \theta < 2\pi$, find $\sin \theta$.

c) If $\tan \theta = \frac{12}{5}$ and $\pi < \theta < \frac{3\pi}{2}$, find $\cos \theta$.

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Answers to Center B

a) $\theta = \pi$  b) $\theta = \frac{4\pi}{3}, \frac{5\pi}{3}$  c) $\frac{\pi}{6}, \frac{11\pi}{6}$
Center D: Using the Sum and Difference Formulas

Use the sum or difference formulas to simplify the following expressions.

a) \( \sin(x + \pi) \)

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

c) \( \tan(x - \pi) \)

Answers to Center C

a) \( -\frac{12}{13} \) \hspace{1cm} b) \( -\frac{4}{5} \) \hspace{1cm} c) \( -\frac{5}{13} \)
Center E: Graphing Sine and Cosine

Graph at least one full period of the following functions.

a) \( f(x) = 2\sin(2x) + 4 \)

b) \( f(x) = \frac{1}{2}\cos(x - \pi) - 1 \)

c) \( f(x) = -\sin(\pi x + 1) + 2 \)

d) \( f(x) = -2\cos(\frac{1}{2}x) + 3 \)

Answers to Center D

a) \(-\sin x\)  
b) \(\cos x\)  
c) \(\tan x\)
Center F: Graphing Tangent and Cotangent

Graph at least one full period of the following functions.

a) \( f(x) = 2\tan(2x) \)

b) \( f(x) = \cot\left(\frac{1}{2}x\right) \)

c) \( f(x) = -3\tan\left(\frac{1}{4}x\right) \)

d) \( f(x) = -\frac{1}{2}\cot(4x) \)

Answers to Center E

Check your answer on Desmos :)
Center G: Graphing Secant and Cosecant

Graph at least one full period of the following functions.

\[ a) \ f(x) = 2csc(2x) \]
\[ b) \ f(x) = \frac{1}{2}sec\left(\frac{1}{2}x\right) \]
\[ c) \ f(x) = -3csc(x) \]
\[ d) \ f(x) = -sec\left(\frac{1}{4}x\right) \]

Answers to Center F

Check your graphs on Desmos :)