

## Center A: Evaluating Trigonometric Expressions

*Find the exact values of the following trigonometric expressions.*

a)  $\sin(-225^\circ)$

b)  $\cos(600^\circ)$

c)  $\tan(-\frac{\pi}{6})$

d)  $\sin(\frac{7\pi}{3})$

e)  $\cos(\frac{3\pi}{2})$

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**Answers to Center G**

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

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### Answers to Center A

a)  $\frac{\sqrt{2}}{2}$

b)  $-\frac{1}{2}$

c)  $-\frac{\sqrt{3}}{3}$

d)  $\frac{\sqrt{3}}{2}$

e) 0

## Center C: Using Right Triangles to Evaluate Trigonometric Expressions

*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)  $\tan(x - \pi)$

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### **Answers to Center C**

a)  $-\frac{12}{13}$

b)  $-\frac{4}{5}$

c)  $-\frac{5}{13}$

## Center E: Graphing Sine and Cosine

*Graph at least one full period of the following functions.*

$$\text{a) } f(x) = 2\sin(2x) + 4$$

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

$$\text{c) } f(x) = -\sin(\pi x + 1) + 2$$

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

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### 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.*

$$\text{a) } f(x) = 2\tan(2x)$$

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

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

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

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**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.*

$$\text{a) } f(x) = 2\csc(2x)$$

$$\text{b) } f(x) = \frac{1}{2}\sec\left(\frac{1}{2}x\right)$$

$$\text{c) } f(x) = -3\csc(x)$$

$$\text{d) } f(x) = -\sec\left(\frac{1}{4}x\right)$$

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**Answers to Center F**

Check your graphs on Desmos :)