

Quiz 12

Name: Key

Math 115, Fall 2016

Thursday Discussion Time: _____

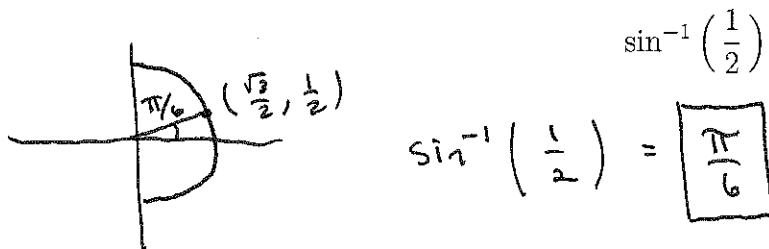
Directions: You have 20 minutes to complete this quiz. Read each problem carefully. There are three problems on the back of this page. Please put a box around your answers. No calculators are allowed.

1. (2 points)

(a) State the domain of the restricted sine function.

domain is : $\boxed{\left[-\frac{\pi}{2}, \frac{\pi}{2}\right]}$

(b) Find the exact value of the following quantity; write your answer as a multiple of π .

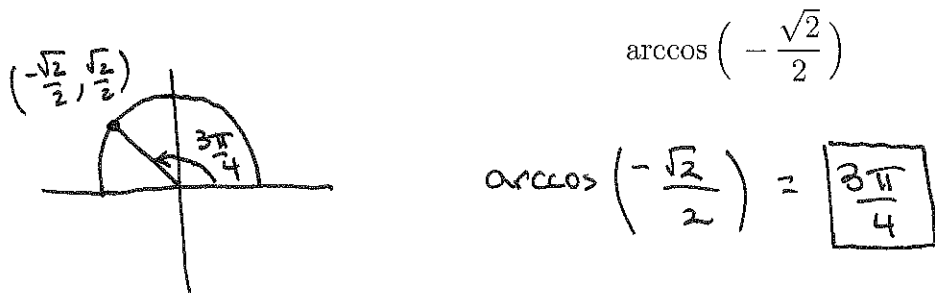


2. (2 points)

(a) State the domain of the restricted cosine function.

domain is : $\boxed{[0, \pi]}$

(b) Find the exact value of the following quantity; write your answer as a multiple of π .



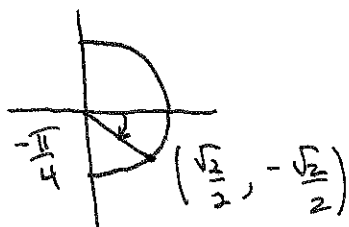
3. (2 points)

(a) State the domain of the restricted tangent function.

domain is : $\boxed{\left(-\frac{\pi}{2}, \frac{\pi}{2}\right)}$

(b) Find the exact value of the following quantity; write your answer as a multiple of π .

$$\tan^{-1}(-1)$$



$$\tan^{-1}(-1) = \boxed{-\frac{\pi}{4}}$$

4. (2 points)

Verify the following identity. Hint: Start by factoring.

$$\sec^2 x - \sec^2 x \sin^2 x = 1$$

$$\sec^2 x (1 - \sin^2 x) = \sec^2 x (\cos^2 x) = \left(\frac{1}{\cos^2 x}\right) \cos^2 x = 1 //$$

5. (2 points)

Find the exact value of the following quantity; write your answer as a multiple of π .

$$\cos^{-1}\left(\cos\left(\frac{7\pi}{4}\right)\right)$$

$$\bullet \cos\left(\frac{7\pi}{4}\right) = \frac{\sqrt{2}}{2}$$

$$\bullet \cos^{-1}\left(\frac{\sqrt{2}}{2}\right) = \boxed{\frac{\pi}{4}}$$