

Math 1613 - Trigonometry

Quiz #16 - 2011.10.11

Solutions

1. For a function to be invertible, what property(ies) must it satisfy?

The function must pass the horizontal line test.

2. Find the exact value of $\sin(255^\circ)$. You may use any identity you want, but here are two that may help:

$$\sin(A + B) = \sin(A) \cos(B) + \cos(A) \sin(B)$$

$$\sin(A - B) = \sin(A) \cos(B) - \cos(A) \sin(B)$$

If we write $255^\circ = 210^\circ + 45^\circ$, then

$$\sin(255^\circ) = \sin(210^\circ) \cos(45^\circ) + \cos(210^\circ) \sin(45^\circ)$$

$$= -\frac{1}{2} \frac{1}{\sqrt{2}} - \frac{\sqrt{3}}{2} \frac{1}{\sqrt{2}}$$

$$= \frac{-1 - \sqrt{3}}{2\sqrt{2}}$$