

Math 1613 - Trigonometry

Quiz #3 - 2009.09.03

Solutions

Find exact values for the following trigonometric functions at the given angles.

1. $\sin(135^\circ)$

First, 135° is an angle in the second quadrant, with reference angle 45° . We know that \sin is positive in the second quadrant, so we have

$$\sin(135^\circ) = \sin(45^\circ) = \frac{1}{\sqrt{2}}$$

2. $\cos(-150^\circ)$

First, -150° is an angle in the third quadrant, with reference angle 30° . We know that \cos is negative in the third quadrant, so we have

$$\cos(-150^\circ) = -\cos(30^\circ) = -\frac{\sqrt{3}}{2}$$

3. $\tan(225^\circ)$

First, 225° is an angle in the third quadrant, with reference angle 45° . We know that \tan is positive in the third quadrant, so we have

$$\tan(225^\circ) = \tan(45^\circ) = 1$$

4. $\cos(300^\circ)$

First, 300° is an angle in the fourth quadrant, with reference angle 60° . We know that \cos is positive in the fourth quadrant, so we have

$$\cos(300^\circ) = \cos(60^\circ) = \frac{1}{2}$$

5. $\tan(-210^\circ)$

First, -210° is an angle in the second quadrant, with reference angle 30° . We know that \tan is negative in the second quadrant, so we have

$$\tan(-210^\circ) = -\tan(30^\circ) = -\frac{1}{\sqrt{3}}$$