

EXAMPLE TRIGONOMETRIC EQUATIONS.

Directions: Solve each equation on the interval $[0, 2\pi)$. Use ONLY those methods discussed in class.

1. $3\sin^2(x)\tan^2(x) - \sin^2(x) = 0$
2. $\tan^2(x) - 1 = 0$
3. $\tan^2(x) + \sqrt{3}\tan(x) = 0$
4. $(\tan^2(x) - 3)(2\cos(x) + 1) = 0$
5. $6\tan^2(x) - 2 = 0$
6. $\tan^3(x) - \tan(x) = 0$

ANSWERS:

1. $\{0, \pi, \pi/6, 7\pi/6\}$
2. $\{\pi/4, 3\pi/4, 5\pi/4, 7\pi/4\}$
3. $\{0, \pi, 2\pi/3, 5\pi/3\}$
4. $\{\pi/3, 2\pi/3, 4\pi/3, 5\pi/3\}$
5. $\{\pi/6, 5\pi/6, 7\pi/6, 11\pi/6\}$
6. $\{0, \pi, \pi/4, 3\pi/4, 5\pi/4, 7\pi/4\}$