Practice 5.4 Part 2 B
Solving Trig Equations

Solve each equation for $0 \leq \theta < 2\pi$.

1) $\tan\left(\theta + \frac{\pi}{6}\right) = \sqrt{3}$

2) $\cos(-4\theta) = 1$

3) $\sin\left(\theta + \frac{\pi}{3}\right) = 1$

4) $-\frac{\sqrt{3}}{2} = \cos(2\theta)$

5) $\sin\left(\frac{\theta}{3}\right) = \frac{1}{2}$

6) $\sin(-4\theta + \pi) = 0$

7) $1 = \sin(2\theta + \pi)$

8) $\tan\left(\pi + \frac{\theta}{3}\right) = 1$

Factor to solve each of the following. Use exact solutions whenever possible. Find ALL solutions in radians. Round decimals answers to the nearest thousandth when needed.

9) $2cos^2x + \cos x = 0$

10) $2sin^2x - \sin x - 1 = 0$

11) $3sin^2x + 2\sin x = 5$

12) $2tan^2x + 5\tan x + 3 = 0$

13) $1 - cos^2x = 1 + \cos x \ + \ cos^2x$

14) $\cos x \csc x = 2\cos x$

15) $cos^3x = \cos x$

16) $4sin^2x + 7\sin x = 2$

17) $25\sin x\cos x - 5\sin x + 20\cos x = 4$

18) $4\sin x\tan x - 3\tan x + 20\sin x - 15 = 0$