Solving Trigonometric Equations

Solve each trigonometric equation.

1) $\dfrac{\sqrt{6}\sec\theta + 2}{2} = \sqrt{3} + 1$

2) $6\cot\theta = 2\sqrt{3}$

3) $\tan\dfrac{7\theta}{3} = \sqrt{3}$

   $= 0$

5) $\sqrt{3}\csc\theta = 2$

6) $\cos 3\theta = -\dfrac{1}{2}$