1. Find the exact value of $\csc\left(\tan^{-1}7\right)$

2. Verify the identity: $5\cos^2\theta + 3\sin^2\theta = 3 + 2\cos^2\theta$

3. Verify the identity: $\dfrac{\csc\theta}{1-\cos\theta} = \dfrac{1+\cos\theta}{\sin^3\theta}$

4. Verify the identity: $\csc\theta - \sin\theta = \cos\theta\cot\theta$

5. Find the exact value of $\sin\left(\dfrac{-\pi}{12}\right)$ using a) sum and difference formulas and b) half-angle formulas

6. Given $\tan\theta = \dfrac{8}{3}, \pi < \theta < \dfrac{3\pi}{2}$, find a) $\sin(2\theta)$ and b) $\sin\dfrac{\theta}{2}$

7. Express each product as a sum containing only sines or cosines: $\cos(3\theta)\cos(4\theta)$

Problems 8-10 are from 0 to $2\pi$ and find the exact answer(s)

8. Solve: $2\cos\theta + \sqrt{2} = 0$

9. Solve: $2\sin^2\theta - 3\sin\theta + 1 = 0$

10. Solve: $\cos\theta = \sec\theta$