1. Solve: $\frac{\sqrt{2}}{3}\sin x + \frac{4}{3} = 1$. Give all real solutions in exact form.

2. Solve: $\sqrt{3}\cos x + \frac{1}{2} = 2$. Give all solutions in $-3\pi \leq x \leq 2\pi$ in exact form. (Hint: after you solve for $\cos x$, multiply the number by $\frac{\sqrt{3}}{\sqrt{3}}$ to make it look more familiar as a "special" value.)

3. Use your calculator to solve: $5 \sin \left[2 \left(x + \frac{\pi}{2} \right) \right] + 3 = 7$. Give all solutions in $-10 \le x \le 10$ rounded to four significant digits. (Hint: -3 was a typo and has been changed to +3)

4. Use your calculator to solve: $2 \sin x = \cos (2x)$. Give all solutions in $0 \le x \le 2\pi$ rounded to four decimal places.

5. Use your calculator to solve: $\sin^2 x > \sin (x^2)$. Give all solutions in $0 \le x \le \pi$ rounded to four significant digits.