Determine solutions for each equation in the interval $0 \le x \le 2\pi$, to the nearest hundredth of a radian. Give exact answers where possible.

a) $\sin(2x) - 0.8 = 0$

b) $5\sin(2x) - 3 = 0$

c) $-4\sin(2x) + 3 = 0$

d) $\sin(2x) = \dfrac{1}{\sqrt{2}}$

e) $\sin(4x) = \dfrac{1}{2}$

f) $\sin(3x) = -\dfrac{\sqrt{3}}{2}$

g) $\cos(4x) = -\dfrac{1}{\sqrt{2}}$

h) $\cos(2x) = -\dfrac{1}{2}$

Answer Key

a) 0.46, 1.11, 3.61, 4.25 **b)** 0.32, 1.25, 3.46, 4.39 **c)** 0.42, 1.15, 3.57, 4.29 **d)** $\dfrac{\pi}{8}, \dfrac{3\pi}{8}, \dfrac{9\pi}{8}, \dfrac{11\pi}{8}$ **e)** $\dfrac{\pi}{24}, \dfrac{5\pi}{24}, \dfrac{13\pi}{24}, \dfrac{17\pi}{24}, \dfrac{25\pi}{24}, \dfrac{29\pi}{24}, \dfrac{37\pi}{24}, \dfrac{41\pi}{24}$

f) $\dfrac{4\pi}{9}, \dfrac{5\pi}{9}, \dfrac{10\pi}{9}, \dfrac{11\pi}{9}, \dfrac{16\pi}{9}, \dfrac{17\pi}{9}$ **g)** $\dfrac{3\pi}{16}, \dfrac{5\pi}{16}, \dfrac{11\pi}{16}, \dfrac{13\pi}{16}, \dfrac{19\pi}{16}, \dfrac{21\pi}{16}, \dfrac{27\pi}{16}, \dfrac{29\pi}{16}$ **h)** $\dfrac{\pi}{3}, \dfrac{2\pi}{3}, \dfrac{4\pi}{3}, \dfrac{5\pi}{3}$