

5.6 Solve Double Angle Trigonometric Equations Worksheet

This document was composed and formatted by Annie Bernatchez.

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Determine solutions for each equation in the interval $0 \leq x \leq 2\pi$, 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) $\sin(2x) = \frac{1}{\sqrt{2}}$
e) $\sin(4x) = \frac{1}{2}$	f) $\sin(3x) = -\frac{\sqrt{3}}{2}$
g) $\cos(4x) = -\frac{1}{\sqrt{2}}$	h) $\cos(2x) = -\frac{1}{2}$

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)** $\frac{\pi}{8}$, $\frac{3\pi}{8}$, $\frac{9\pi}{8}$, $\frac{11\pi}{8}$

e) $\frac{\pi}{24}$, $\frac{5\pi}{24}$, $\frac{13\pi}{24}$, $\frac{17\pi}{24}$, $\frac{25\pi}{24}$, $\frac{29\pi}{24}$, $\frac{37\pi}{24}$, $\frac{41\pi}{24}$

f) $\frac{4\pi}{9}$, $\frac{5\pi}{9}$, $\frac{10\pi}{9}$, $\frac{11\pi}{9}$, $\frac{16\pi}{9}$, $\frac{17\pi}{9}$

g) $\frac{3\pi}{16}$, $\frac{5\pi}{16}$, $\frac{11\pi}{16}$, $\frac{13\pi}{16}$, $\frac{19\pi}{16}$, $\frac{21\pi}{16}$, $\frac{27\pi}{16}$, $\frac{29\pi}{16}$

h) $\frac{\pi}{3}$, $\frac{2\pi}{3}$, $\frac{4\pi}{3}$, $\frac{5\pi}{3}$