Solving Trig Equations

Non Calculator

1. Solve the following for $0 \leq x \leq 360^0$

a. $\sin 2x = \frac{\sqrt{3}}{2}$ b. $\cos 2x = \frac{\sqrt{3}}{2}$ c. $\tan 2x = \sqrt{3}$ d. $\cos 3x = \frac{\sqrt{2}}{2}$

e. $\sin 3x = \frac{1}{2}$ f. $3\tan 2x = \sqrt{3}$ g. $4\sin 2x - 1 = 3$ h. $4\cos 3x + 5 = 7$

2. Solve the following for $0 \leq x \leq 2\pi$

a. $\sin x = \frac{1}{2}$ b. $\cos x = \frac{1}{\sqrt{2}}$ c. $\tan x = \frac{1}{\sqrt{3}}$ d. $\cos x = \frac{\sqrt{3}}{2}$

e. $\sin 2x = \frac{1}{2}$ f. $\cos 2x = \frac{1}{2}$ g. $\tan 2x = \sqrt{3}$ h. $\cos 3x = \frac{\sqrt{2}}{2}$

3. Solve the following for $0 \leq x \leq 360^0$

a. $\sin^2 x + 5\sin x - 6 = 0$

b. $\sin^2 x - 1 = 0$

c. $8\sin^2 x - 4\sin x = 0$

d. $2\cos^2 x + \sqrt{3}\cos x = 0$

e. $\left(3\tan x - \sqrt{3}\right)(\tan x + 1) = 0$

f. $4\cos^2 x - 4\cos x + 1 = 0$

4. Solve the following for $0 \leq x \leq 2\pi$

a. $\cos^2 x - 4\cos x - 5 = 0$

b. $\tan^2 x - 1 = 0$

c. $5\tan^2 x + 5\tan x = 0$

d. $(2\sin x - 1)(\sin x + 5) = 0$

e. $2\sin^2 x + 7\sin x + 3 = 0$

f. $2\sin^2 x + 3\sin x + 1 = 0$

Calculator

4. Solve the following for $0 \leq x \leq 360$:

a. $3\sin^2 x - 7\sin x - 6 = 0$ b. $4\cos^2 x + 15\cos x - 4 = 0$

c. $9\sin^2 x - 4 = 0$ d. $5\tan^2 x - 1 = 0$

e. $6\cos^2 x - 11\cos x + 3 = 0$ f. $3\sin^2 x + 14\sin x - 5 = 0$