

## TRIGONOMETRIC EQUATIONS INVOLVING ANGLE FORMULAE

1 Solve: (a)  $\cos 2\theta = \cos \theta, 0 \leq \theta \leq 2\pi$

(b)  $2 \cos 2\theta = 4 \cos \theta - 3, 0 \leq \theta \leq 2\pi$

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**1** Solve:

(c)  $3 \tan 2\theta = 2 \tan \theta, 0 \leq \theta \leq 2\pi$

(d)  $\tan \theta + 2 \cot \theta = 3, 0^\circ \leq \theta \leq 360^\circ$

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**3** Solve:    **(a)**  $\cos 2x \cos \frac{\pi}{6} - \sin 2x \sin \frac{\pi}{6} = \frac{1}{2}, 0 \leq x \leq 2\pi$

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5 Solve  $\tan \theta = \sin 2\theta$ ,  $0 \leq \theta \leq 2\pi$ .

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6 Solve  $\cos^2 \theta = 2 \cos^2 \frac{\theta}{2}$ ,  $0^\circ \leq \theta \leq 360^\circ$ .

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7 Solve  $\sin 3x \cos x - \cos 3x \sin x = \frac{\sqrt{3}}{2}$ ,  $0 \leq x \leq 2\pi$ .

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9 Solve for  $0 \leq \theta \leq \pi$ , the equations:

(a)  $\sin 4\theta \cos \theta = \sin 3\theta \cos 2\theta$

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**10** Solve for  $0 \leq x \leq 2\pi$ , the equations:

(a)  $2 \cos \left( x + \frac{\pi}{3} \right) \cos x = 1$



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**11** Solve for  $0 \leq \theta \leq \pi$ , the equations:

(c)  $\sin\left(\theta + \frac{\pi}{4}\right) + \sin\left(\theta + \frac{\pi}{12}\right) = 1$

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**12** Solve for  $0 \leq x \leq 2\pi$ , the equations:

(a)  $\sin 2x - \sin x = \cos 2x - \cos x$