

Trigonometric equations – Double angle formulae

Solve for $0 \leq x \leq 360^\circ$

1. $5\cos 2x + \sin x - 2 = 0$

2. $3\cos 2x - 2\cos x + 3 = 0$

3. $5\sin 2x = 7\cos x$

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

5. $7\sin 2x = 13\sin x$

6. $\cos 2x + \sin x - 1 = 0$

7. $3\cos 2x + \sin x - 1 = 0$

8. $2\cos 2x + \cos x - 3 = 0$

9. $3\sin 2x = \sin x$

10. $7\cos 2x - 17\cos x + 1 = 0$

11. $\cos 2x - 8\cos x + 1 = 0$

12. $4\sin 2x = 5\cos x$

13. $8\cos 2x + 38\cos x + 29 = 0$

14. $3\cos 2x - 11\sin x - 8 = 0$

Solutions

1. $SS = \{37, 143, 210, 330\}$

2. $SS = \{71, 90, 270, 289\}$

3. $SS = \{44, 90, 136, 270\}$

4. $SS = \{0, 180, 360\}$

5. $SS = \{0, 22, 180, 338, 360\}$

6. $SS = \{0, 30, 150, 180, 360\}$

7. $SS = \{42, 138, 210, 330\}$

8. $SS = \{0, 360\}$

9. $SS = \{0, 80, 180, 280, 360\}$

10. $SS = \{107, 253\}$

11. $SS = \{90, 270\}$

12. $SS = \{39, 90, 141, 270\}$

13. $SS = \{151, 209\}$

14. $SS = \{236, 270, 304\}$