Name:

Level 2 Further Maths

Trigonometric Equations

Corbettmaths

Ensure you have: Pencil or pen

Guidance

1. Read each question carefully before you begin answering it.
2. Check your answers seem right.
3. Always show your workings

Revision for this topic

www.corbettmaths.com/more/further-maths/

1. Solve $sin\theta = 0.75$ for $0° \leq \theta \leq 180°$

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(2)

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2. Solve $tan\theta = 1.4$ for $0° \leq \theta \leq 360°$

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(2)

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3. Solve $cos\theta = -0.9$ for $0° \leq \theta \leq 360°$

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(2)

4. Solve $2tan\theta = 1.44$ for $0° \leq \theta \leq 360°$

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(3)

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5. Solve $3cos\theta = 1$ for $0° \leq \theta \leq 360°$

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(3)

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6. Solve $2 + sin\theta = 1.05$ for $0° \leq \theta \leq 360°$

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(3)

7. Solve $8sin\theta - 5 = 0$ for $0° \leq \theta \leq 360°$

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(3)

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8. Solve $cos^2 x = \frac{1}{4}$ for $0° \leq x \leq 360°$

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(3)

9. Solve $64sin^2x = 25$ for $0° \leq x \leq 360°$

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(4)

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10. Solve $3tan^2\theta - 1 = 0$ for $0° \leq \theta \leq 180°$

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(4)

11. Solve $5sinx = 4cosx$ for $0° \leq x \leq 360°$

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(4)

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12. Solve $10cos\theta + 4sin\theta = 0$ for $90° \leq \theta \leq 360°$

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(4)

13. Solve $-cosx = 8sinx$ for $0° \leq x \leq 360°$

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(4)

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14. Solve $tan^2x - 2tanx = 0$ for $0° \leq x \leq 360°$

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(5)

15. Solve $4cos^2\theta - 3cos\theta = 0$ for $0° \leq \theta \leq 360°$

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(4)

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16. Solve $2cos^2\theta - cos\theta - 1 = 0$ for $0° \leq \theta \leq 360°$

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(4)

17. Solve $4sin^2\theta + 4sin\theta - 3 = 0$ for $0^\circ \leq \theta \leq 360^\circ$

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(4)

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18. Solve $5tan^2\theta - 6tan\theta = -1$ for $0^\circ \leq \theta \leq 360^\circ$

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(5)

19. (a) Prove $cos^2x - 2sin^2x \equiv 3cos^2x - 2$

(2)

(b) Hence, work out the values of x between $0°$ and $360°$ for which

$cos^2 - 2sin^2x = 0$

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(4)

20. (a) Show that $2cos^2\theta \equiv 2 - 2sin^2\theta$

(2)

(b) Hence solve $2cos^2\theta - sin\theta = 1$ for $0° \leq \theta \leq 360°$

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(4)

21. Show that $3cos^2\theta \equiv 3 - 3sin^2\theta$

(2)

(b) Hence solve $3cos^2\theta - 5sin\theta = 1$ for $0° \leq \theta \leq 360°$

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(4)

22. Solve $6sin^2\theta + 7cos\theta - 8 = 0$ for $0° \leq \theta \leq 360°$

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(7)