Name:

GCSE Further Maths

Trigonometric Equations

Corbettmaths

Ensure you have: Pencil, Pen, Calculator

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/gcse-further-maths

1. Solve $sinx = 0.75$ for $0° \leq x \leq 360°$

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(2)

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2. Solve $tanx = 1.4$ for $0° \leq x \leq 360°$

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(2)

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3. Solve $cosx = -0.9$ for $0° \leq x \leq 360°$

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(2)

4. Solve $tanx = -\frac{\sqrt{3}}{3}$ for $-180° \leq x \leq 180°$

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(2)

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5. Solve $cosx = 0.765$ for $-180° \leq x \leq 180°$

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(2)

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6. Solve $sinx = -\frac{4}{5}$ for $-180° \leq x \leq 180°$

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(2)

7. Solve $tanx = 4.5$ for $-360° \leq x \leq 0°$

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(3)

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8. Solve $3cosx = 1$ for $0° \leq x \leq 360°$

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(3)

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9. Solve $2 + sinx = 1.05$ for $-180° \leq x \leq 180°$

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(3)

10. (i) Solve $sinx = 0.3$ for $0° \leq x \leq 360°$

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(3)

(ii) Hence solve $sin\,2\theta = 0.3$ for $0° \leq \theta \leq 180°$

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(2)

11. (i) Solve $cosx = -\frac{3}{4}$ for $-180° \leq x \leq 180°$

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(3)

(ii) Hence solve $cos\,3\theta = -\frac{3}{4}$ for $-60° \leq \theta \leq 60°$

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(2)

12. (i) Solve $tanx = 2.5$ for $-180° \leq x \leq 180°$

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(3)

(ii) Hence solve $tan\frac{\theta}{2} = 2.5$ for $-360° \leq \theta \leq 360°$

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(2)

13. (i) Solve $cosx = 0.82$ for $0° \leq x \leq 360°$

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(3)

(ii) Hence solve $cos(2\theta + 15°) = 0.82$ for $0° \leq \theta \leq 180°$

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(3)

14. (i) Solve $tan x = -\sqrt{3}$ for $-180° \leq x \leq 180°$

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(3)

(ii) Hence solve $tan(2\theta - 10°) = -\sqrt{3}$ for $-90° \leq \theta \leq 90°$

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(3)

15. (i) Solve $sinx = -\frac{1}{2}$ for $-180° \leq x \leq 180°$

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(3)

(ii) Hence solve $sin(3\theta - 18°) = -\frac{1}{2}$ for $-60° \leq \theta \leq 60°$

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(3)

16. (i) Solve $8sinx = -5$ for $-180° \leq x \leq 180°$

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(3)

(ii) Hence solve $8sin\left(\frac{\theta}{2} - 20°\right) = -5$ for $-360° \leq \theta \leq 360°$

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(3)

17. Solve the equation $cos(3x - 12°) = 0.5$ for $-60° \leq x \leq 60°$

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(6)

18. Solve the equation $tan(2x + 15°) = 1.49$ for $90° \leq x \leq 180°$

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(6)

19. Solve the equation $sin\left(\frac{2}{3}x - 20°\right) = -0.5$ for $0° \leq x \leq 360°$

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(6)