

PLOTTING QUADRATICS

Answer all of these questions. Remember to show your working out in all questions.

MAIN QUESTIONS

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| 1. Factorise $x^2 + 5x + 6$ | 2. Factorise $x^2 - 4x - 5$ |
| 3. Solve $x^2 + 6x + 8 = 0$ | 4. Solve $2x^2 - 7x + 3 = 0$ |
| 5. Find roots of $3x^2 + 2x - 1 = 0$ | 6. Find roots of $x^2 - 3x + 1 = 0$ |
| 7. Solve $4x^2 - 12x + 9 = 0$ | 8. Solve $5x^2 + 3x - 2 = 0$ |
| 9. Complete square: $x^2 - 2x - 3$ | 10. Complete square: $x^2 + 8x + 5$ |
| 11. Complete square: $2x^2 - 4x + 1$ | 12. Complete square: $3x^2 + 12x - 4$ |
| 13. Complete square: $-x^2 + 6x - 2$ | 14. Find vertex of $y = x^2 - 6x + 8$ |
| 15. Find vertex of $y = -x^2 + 4x + 1$ | 16. Find vertex of $y = 2x^2 + 8x - 3$ |
| 17. Find axis of symmetry for $y = x^2 + 10x - 3$ | 18. Find axis of symmetry for $y = -3x^2 + 6x + 2$ |
| 19. Find y-intercept of $y = 4x^2 - 3x + 7$ | 20. State if $y = 5x^2 - 2x + 1$ has max or min |
| 21. State if $y = -2x^2 + x - 4$ has max or min | 22. Find minimum value of $y = x^2 - 4x + 10$ |
| 23. Find maximum value of $y = -x^2 - 6x + 3$ | 24. Find roots of $0.5x^2 + 2x - 4 = 0$ |
| 25. Solve $1.2x^2 - 3.6x + 1.8 = 0$ | |

MASTER QUESTIONS



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- M1.** A rectangle has area 24cm^2 with length 2cm more than width. Find dimensions.
- M2.** The product of two consecutive integers is 72. Find both pairs.
- M3.** A ball's height h metres after t seconds is $h = 20t - 5t^2$. Find maximum height.
- M4.** A shop's daily profit £ P from selling x items is $P = -2x^2 + 80x$. Find items for maximum profit.
- M5.** A field's area is 300m^2 with one side 10m longer than the other. Find the dimensions.