

Name: _____ Date: _____

SOLVING QUADRATIC EQUATIONS

Instructions: Complete all questions in the Spiral, Develop, and Apply sections. Show all your working out.

SPIRAL

- | | |
|---|---|
| 1. Rearrange the formula to make t the subject: $v = u + t/3$. | 3. Starting with $x_0 = 2$, use the iteration formula $x_{n+1} = \sqrt{(5x_n - 3)}$ to find x_1 . |
| 2. A laptop is sold for £468 after a 10% discount. What was the original price? | 4. Calculate the arc length of a sector with radius 12 cm and angle 60° . Give your answer in terms of π . |
-

DEVELOP

<https://corbettmaths.com/2013/05/15/solving-quadratics-by-factorising/>

- | | |
|--------------------------|---------------------------|
| 1. $x^2 + 7x + 10 = 0$ | 14. $7x^2 - 3x - 2 = 0$ |
| 2. $2x^2 - 5x - 3 = 0$ | 15. $x^2 - 8x + 15 = 0$ |
| 3. $3x^2 + 8x + 4 = 0$ | 16. $2x^2 - 9x + 10 = 0$ |
| 4. $x^2 - 6x + 9 = 0$ | 17. $x^2 + 6x = 7$ |
| 5. $4x^2 - 11x + 6 = 0$ | 18. $5x^2 + 2x - 3 = 0$ |
| 6. $x^2 + 4x - 21 = 0$ | 19. $3x^2 = 4x + 7$ |
| 7. $5x^2 - 20x = 0$ | 20. $x^2 - 10x + 24 = 0$ |
| 8. $2x^2 + 7x + 3 = 0$ | 21. $4x^2 + 12x + 9 = 0$ |
| 9. $x^2 - 5x = 24$ | 22. $5x^2 - 7x - 6 = 0$ |
| 10. $3x^2 - 10x + 7 = 0$ | 23. $x^2 - 3x - 40 = 0$ |
| 11. $6x^2 + x - 15 = 0$ | 24. $6x^2 + 11x - 10 = 0$ |
| 12. $x^2 + 9x + 14 = 0$ | 25. $2x^2 + 5x = 12$ |
| 13. $4x^2 - 25 = 0$ | |
-

APPLY

1. A rectangle has length $(3x + 2)$ cm and width $(x - 1)$ cm. The area is 44 cm^2 . Solve for x .
2. The height h metres of a rocket is given by $h = 20t - 5t^2$, where t is time in seconds. At what times will the rocket be 15 metres high?