Name:

Exam Style Questions

GCSE Foundation
Solving Quadratics

Corbettmaths

Equipment needed: Pen, Calculator

Guidance

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

Video Tutorial

www.corbettmaths.com/contents

Video 266

Answers and Video Solutions

1. Solve $(x-2)(x+9)=0$

$x=2$ or $x=-9$

$x=2$ or $x=-9$

(1)

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2. Circle the two roots of $(x-6)(x+1)=0$

-6 $\quad$ -1 $\quad$ 1 $\quad$ 6

(1)

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3. Solve $x^2+5x+6=0$

$(x+2)(x+3)=0$

$x=-2$ or $x=-3$

$x=-3$ or $x=-2$

(2)

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4. Solve $x^2+9x+14=0$

$(x+7)(x+2)=0$

$x=-7$ or $x=-2$

$x=-7$ or $x=-2$

(2)

5. Solve $x^2 + 21x + 20 = 0$

$(x + 1)(x + 20) = 0$

$x = -1$ or $x = -20$

$x = -1$ or $x = -20$

(2)

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6. Solve $x^2 - 3x - 18 = 0$

$(x - 6)(x + 3) = 0$

$x = 6$ or $x = -3$

$x = -3$ or $x = 6$

(2)

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7. Solve $x^2 + x - 12 = 0$

$(x + 4)(x - 3) = 0$

$x = -4$ or $x = 3$

$x = -4$ or $x = 3$

(2)

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8. Solve $x^2 - x - 6 = 0$

$(x - 3)(x + 2) = 0$

$x = 3$ or $x = -2$

$x = -2$ or $x = 3$

(2)

9. Solve $x^2 - 49 = 0$

$(x-7)(x+7) = 0$

$x = 7$ or $x = -7$

$x = -7$ or $x = 7$

(2)

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10. Solve $x^2 - 2x - 8 = 0$

$(x-4)(x+2) = 0$

$x = 4$ or $x = -2$

$x = -2$ or $x = 4$

(2)

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11. Solve $x^2 + 10x - 24 = 0$

$(x+12)(x-2) = 0$

$x = -12$ or $x = 2$

$x = -12$ or $x = 2$

(2)

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12. Solve $x^2 - 13x + 30 = 0$

$(x-3)(x-10) = 0$

$x = 3$ or $x = 10$

$x = 3$ or $x = 10$

(2)

13. Solve $y^2 + 4y - 12 = 0$

$(y+6)(y-2) = 0$

$y = -6$ or $y = 2$

$y = -6$ or $y = 2$

(2)

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14. Solve $m^2 + 24m + 63 = 0$

$(m+21)(m+3) = 0$

$m = -21$ or $m = -3$

$m = -21$ or $m = -3$

(2)

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15. Solve $m^2 - 16m + 64 = 0$

$(m-8)(m-8) = 0$

$m = 8$

$m = 8$

(2)

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16. The two solutions to $x^2 + bx + c = 0$ are $x = -8$ and $x = -2$

Find the values of b and c

$(x+8)(x+2) = 0$

$x^2 + 10x + 16 = 0$

b = 10 c = 16

(2)

17. The equation $x^2 + bx + c = 0$ has one solution of $x = -3$

Find the values of b and c

$(x+3)(x+3) = 0$

$x^2 + 6x + 9 = 0$

b = 6 c = 9

(2)

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18. Solve $y^2 - 6y = 27$

$y^2 - 6y - 27 = 0$

$(y-9)(y+3) = 0$

$y = 9$ or $y = -3$

$y = 9$ or $y = -3$

(2)

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19. Solve $w^2 + 2w = 8$

$w^2 + 2w - 8 = 0$

$(w+4)(w-2) = 0$

$w = -4$ or $w = 2$

$w = -4$ or $w = 2$

(2)

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20. Solve $x^2 = 8x - 15$

$x^2 - 8x + 15 = 0$

$(x-5)(x-3) = 0$

$x = 5$ or $x = 3$

$x = 5$ or $x = 3$

(2)

21. Solve $x^2 + 70 = 17x$

$x^2 - 17x + 70 = 0$

$(x - 10)(x - 7) = 0$

$x = 10$ or $x = 7$

$x = 10$ or $x = 7$

(2)

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22. Solve $y^2 + 9y + 2 = 8y + 58$

$y^2 + y - 56 = 0$

$(y + 8)(y - 7) = 0$

$y = -8$ or $y = 7$

$y = -8$ or $y = 7$

(2)

23. Victor is y years old.

His brother Fred is four years old than Victor. $y + 4$

The product of their ages is 780.

(a) Set up an equation to represent this information.

$y(y + 4) = 780$

$y^2 + 4y = 780$

$y^2 + 4y - 780 = 0$

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(2)

(b) Solve your equation from (a) to find Victor's age.

$(y + 30)(y - 26) = 0$

$y = -30$ or $y = 26$

$\times$ $\checkmark$

26

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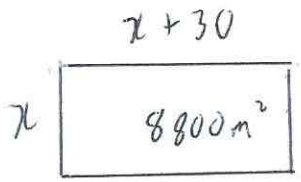
(2)

24. A rectangular field is 30m longer than wide.
The area of the field is 8800m²

Work out the perimeter of the field.



$x(x+30) = 8800$

$x^2 + 30x - 8800 = 0$

$(x+110)(x-80) = 0$

$x = -110$ or $x = 80$

X ✓

$80 + 110 + 80 + 110 = 380$ m

380 .....m

(4)