

Name:

Exam Style Questions

Solving Quadratics by Factorising



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

Videos 266, 267e



Answers and Video Solutions



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



.....
(1)

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



-6 -1 1 6

.....
(1)

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



.....
(2)

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



.....
(2)

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



.....
(2)

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



.....
(2)

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



.....
(2)

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



.....
(2)

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



.....
(2)

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



.....
(2)

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



.....
(2)

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



.....
(2)

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



.....
(2)

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



.....
(2)

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



.....
(2)

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



Find the values of b and c

$b = \dots\dots\dots$ $c = \dots\dots\dots$
(2)

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



Find the values of b and c

$b = \dots\dots\dots$ $c = \dots\dots\dots$
(2)

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



$\dots\dots\dots$
(2)

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



$\dots\dots\dots$
(2)

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



$\dots\dots\dots$
(2)

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



.....
(2)

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



.....
(2)

23. Solve $(2x - 1)(x - 3) = 0$



.....
(2)

24. Solve $(4x + 3)(5x - 2) = 0$



.....
(2)

25. Solve $2x^2 + 5x + 2 = 0$



.....
(3)

26. Solve $5x^2 + 19x - 4 = 0$



.....
(3)

27. Solve $2x^2 - 11x + 15 = 0$



.....
(3)

28. Solve $4x^2 - 9 = 0$



.....
(2)

29. Solve $3x^2 - 2x - 8 = 0$



.....
(3)

30. Solve $4x^2 + 12x + 5 = 0$



.....
(3)

31. Solve $6x^2 + 47x - 8 = 0$



.....
(3)

32. Solve $5y^2 + 8y - 100 = y^2 + 4y - 37$



.....
(3)

33. Victor is y years old.
His brother Fred is four years old than Victor.



The product of their ages is 780.

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

.....
(2)

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

.....
(2)

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



Work out the perimeter of the field.

.....m
(4)

-
35. The perpendicular height of a triangle is $x + 9$ cm
The base of the triangle is x cm
The triangle has an area of 95cm²



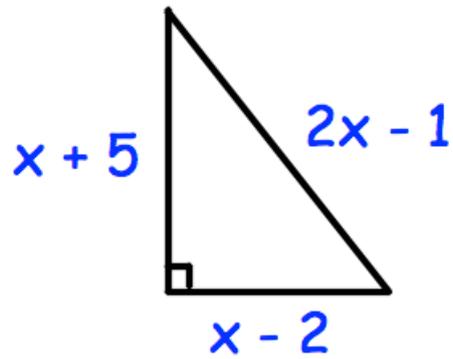
(a) Show that $x^2 + 9x - 190 = 0$

(2)

(b) Solve the equation to find the value of x

$x =$
(2)

36.



Shown is a right angled triangle with sides are measured in centimetres.

(a) Show that $x^2 - 5x - 14 = 0$

(4)

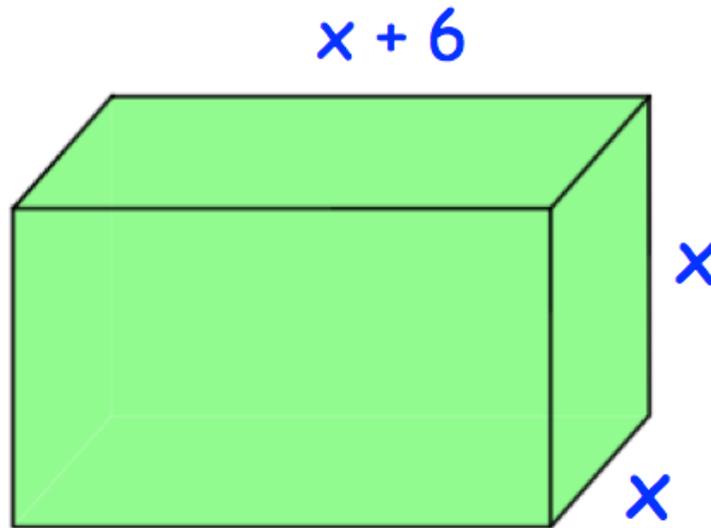
(b) Find x .

.....cm
(2)

(c) Find the area of the triangle.

.....cm²
(1)

37.



The surface area of the cuboid is 270cm^2

(a) Show $x^2 + 4x - 45 = 0$

(4)

(b) Find x

.....cm
(2)

(c) Find the volume of the cuboid.

..... cm^2
(1)

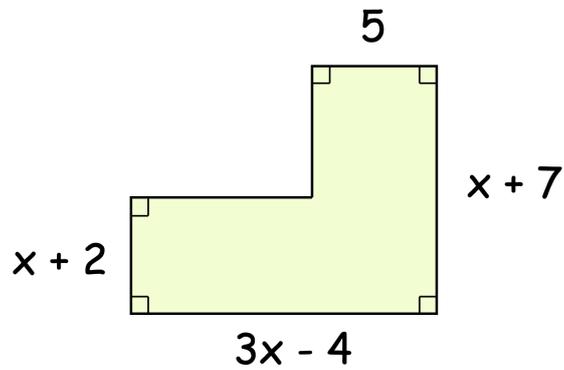
38. Solve



$$\frac{25}{m+3} = m+3$$

$m = \dots\dots\dots$ or $m = \dots\dots\dots$
(2)

39. The area of the shape below is 137cm^2



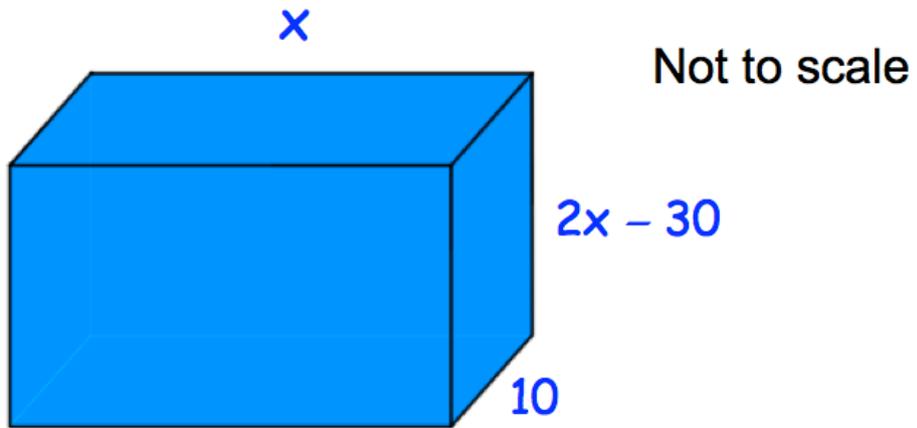
(a) Show that $3x^2 + 2x - 120 = 0$

(3)

(b) Solve the equation to find the value of x

$x = \dots\dots\dots$
(2)

40. The diagram shows a cuboid.
The volume of the cuboid is 5000cm^3



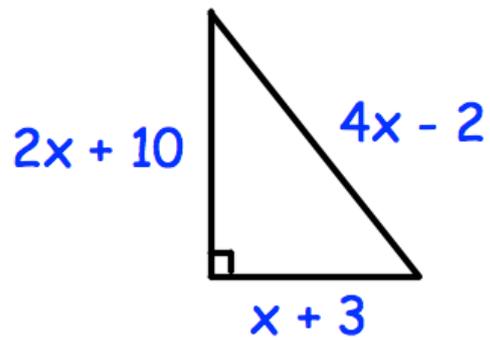
(a) Show $2x^2 - 30x - 500 = 0$

(3)

(b) Solve $2x^2 - 30x - 500 = 0$ to find x , the length of the cuboid.

.....cm
(3)

41. Shown below is a right angled triangle.



Show that $11x^2 - 62x - 105 = 0$

(4)

42. $(3^{x-7})^{x-5} = 27$



Find the possible values of x .

.....
(3)

43. A wire of length 20cm is cut into **two** pieces, each of which is bent into a square.



(a) If the length of the side of one square is x cm, show that the length of the side of the other square is $(5 - x)$ cm

(2)

The **total** area of the two squares is 14.5cm^2

(b) Find the lengths of the two pieces of wire.

..... andcm
(4)

44. The first three terms of a geometric sequence are 2, $4x$ and $x + 30$



(a) Find the possible values of x .

.....
(4)

(b) Find the possible values of the 4^{th} term of the geometric sequence.

.....
(2)

45. Jenson and Bert each write down a fraction.



Jenson wrote down a fraction where the denominator is one more than twice the numerator.

Both the numerator and denominator of Bert's fraction are three more than Jenson's.

The sum of the two fractions is $\frac{37}{36}$

Find the difference between the fractions.

.....
(6)