

GCSE MATHS • GRADE 3

MATHS



MODEL ANSWERS

SOLVING EQUATIONS

SCORE

/92

PERCENTAGE

%

STEM UP

1 Solve $n + 11 = 38$

$$n = 38 - 11 = 27$$

$$n = 27$$

1

 / 1

2 Solve $7b = 56$

$$b = 56 \div 7 = 8$$

$$b = 8$$

1

 / 1

3 Solve $\frac{m}{3} = 8$

$$m = 8 \times 3 = 24$$

$$m = 24$$

1

 / 1

4 Solve $n - 17 = 0$

$$n = 0 + 17 = 17$$

$$n = 17$$

1

 / 1

5 Solve $5b = 30$

$$b = 30 \div 5 = 6$$

$$b = 6$$

1

 / 1

6 Solve $\frac{y}{8} = 2$

$$y = 2 \times 8 = 16$$

$$y = 16$$

1

 / 1

7 Solve $y + y + y = 6$

$$3y = 6, \text{ so } y = 6 \div 3 = 2$$

$$y = 2$$

1

 / 1

8 Write a number in each space to make the calculation correct.

(i) $15 + \underline{\hspace{2cm}} = 18$

(ii) $5 + \underline{\hspace{2cm}} = 18$

(i) $18 - 15 = 3$

(ii) $18 - 5 = 13$

$$(i) 3, (ii) 13$$

1

 / 1

9 Solve $\frac{y}{3} = 6$

$$y = 6 \times 3 = 18$$

$$y = 18$$

1

 / 1

10 Solve $k + k + k = 27$

$$3k = 27, \text{ so } k = 27 \div 3 = 9$$

$$k = 9$$

/ 1

11 Write a number in each space to make the calculation correct.

(i) $10 + \underline{\hspace{2cm}} = 18$

(ii) $\underline{\hspace{2cm}} + 13 = 15$

(i) $18 - 10 = 8$

(ii) $15 - 13 = 2$

$$(i) 8, (ii) 2$$

/ 1

12 Write a number in each space to make the calculation correct.

(i) $5 \times \underline{\hspace{2cm}} = 20$

(ii) $15 - \underline{\hspace{2cm}} = 11$

(i) $20 \div 5 = 4$

(ii) $15 - 11 = 4$

$$(i) 4, (ii) 4$$

/ 1

13 Solve $n + n + n + n + n = 25$

$$5n = 25, \text{ so } n = 25 \div 5 = 5$$

$$n = 5$$

1

 / 1

14 Solve $8 - y = 16$

$$8 - y = 16, \text{ so } -y = 16 - 8 = 8$$

$$y = -8$$

1

 / 1

15 Write a number in each space to make the calculation correct.

(i) $44 \div \underline{\hspace{2cm}} = 4$

(ii) $7 \times \underline{\hspace{2cm}} = 63$

(i) $44 \div 4 = 11$

(ii) $63 \div 7 = 9$

$$(i) 11, (ii) 9$$

1

 / 1

16 Solve $t + t + t + t + t + 6 = 31$

$5t = 31 - 6 = 25$, so $t = 5$

$t = 5$

/ 1

17 Solve $9p + 16 = 106$

$9p = 106 - 16 = 90$

$p = 90 \div 9 = 10$

$p = 10$

/ 1

18 Write a number in each space to make the calculation correct.

(i) $17 - \underline{\hspace{2cm}} = 5$

(ii) $18 \div \underline{\hspace{2cm}} = 3$

(i) $17 - 5 = 12$

(ii) $18 \div 3 = 6$

(i) 12, (ii) 6

/ 1

19 Solve $n + n + n + n + 7 = 27$

$$4n = 27 - 7 = 20, \text{ so } n = 5$$

$$n = 5$$

/ 1

20 Solve $95 = 8m + 15$

$$8m = 95 - 15 = 80$$

$$m = 80 \div 8 = 10$$

$$m = 10$$

/ 1

21 Solve $9n + 9 = 28$

Give your answer as a fraction.

$$9n = 28 - 9 = 19$$

$$n = \frac{19}{9}$$

/ 2

22 Solve $11 - 4y = 31$

$$-4y = 31 - 11 = 20$$

$$y = -20 \div 4 = -5$$

$$y = -5$$

2

 / 2

23 Solve $8n = 6n + 20$

Subtract $6n$ from both sides: $2n = 20$

$$n = 20 \div 2 = 10$$

$$n = 10$$

2

 / 2

24 Solve $8y - 2 = 23$

Give your answer as a fraction.

$$8y = 23 + 2 = 25$$

$$y = \frac{25}{8}$$

2

 / 2

25 Solve $13 - 3k = 19$

$$-3k = 19 - 13 = 6$$

$$k = -6 \div 3 = -2$$

$$k = -2$$

2

 / 2

26 Solve $\frac{3y}{4} = 15$

$$3y = 15 \times 4 = 60$$

$$y = 60 \div 3 = 20$$

$$y = 20$$

2

 / 2

27 Solve $6a = a + 5$

Subtract a from both sides: $5a = 5$

$$a = 5 \div 5 = 1$$

$$a = 1$$

2

 / 2

28 Solve $6(k + 3) = 12$

$$k + 3 = 12 \div 6 = 2$$

$$k = -1$$

$$\boxed{2} / 2$$

29 Solve $\frac{7m}{2} = 35$

$$7m = 35 \times 2 = 70$$

$$m = 70 \div 7 = 10$$

$$m = 10$$

$$\boxed{2} / 2$$

30 The sides of a triangle, in cm, are $x + 1$, x and $x + 2$.

The perimeter of the triangle is 36 cm.

Work out the value of x .

$$3x + 3 = 36$$

$$3x = 33$$

$$x = 11$$

$$\boxed{2} / 2$$

31 Solve $7(t + 3) + 6 = 69$

$$7(t + 3) = 69 - 6 = 63$$

$$t + 3 = 63 \div 7 = 9$$

$$t = 6$$

2

 / 2

32 Solve $\frac{n - 3}{5} = 8$

$$n - 3 = 8 \times 5 = 40$$

$$n = 40 + 3 = 43$$

$$n = 43$$

2

 / 2

33 The sides of a triangle, in cm, are $3x - 1$, $2x + 1$ and $2x$.

The perimeter of the triangle is 77 cm.

Work out the value of x .

$$7x = 77$$

$$7x = 77$$

$$x = 11$$

2

 / 2

34 Solve $2(t + 4) = 15$

$$t + 4 = 15 \div 2 = 7.5$$

$$t = 7.5 - 4 = 3.5$$

$$t = 3.5$$

/ 2

35 Solve $\frac{x - 6}{2} = 5$

$$x - 6 = 5 \times 2 = 10$$

$$x = 10 + 6 = 16$$

$$x = 16$$

/ 2

36 The angles of a triangle, in degrees, are x , $2x$ and $x - 4$.

Work out the value of x .

$$4x - 4 = 180$$

$$4x = 184$$

$$x = 46$$

/ 2

37 Solve $36 = 24 - 4p$

$$24 - 4p = 36$$

$$4p = 24 - 36 = -12$$

$$p = -12 \div 4 = -3$$

$$p = -3$$

2

 / 2

38 Solve $\frac{y+1}{2} = 3$

$$y + 1 = 3 \times 2 = 6$$

$$y = 6 - 1 = 5$$

$$y = 5$$

2

 / 2

39 Solve $7k + 10 = 6k + 6$

Subtract $6k$: $k + 10 = 6$

$$k = -4$$

3

 / 3

40 Solve $2(n + 5) = 7$

$$n + 5 = 7 \div 2 = 3.5$$

$$n = 3.5 - 5 = -1.5$$

$$n = -1.5$$

3 / 3

41 (a) Solve $11b = 110$

(b) Solve $\frac{5n}{3} + 8 = 33$

$$(a) b = 110 \div 11 = 10$$

$$(b) \frac{5n}{3} = 33 - 8 = 25$$

$$5n = 25 \times 3 = 75$$

$$(a) b = 10; (b) n = 15$$

3 / 3

42 Solve $-2m - 10 = m - 16$

Subtract m : $-3m - 10 = -16$

$$-3m = -6$$

$$m = 2$$

3 / 3

43 Solve $126 = 6(3p - 3)$

$$126 \div 6 = 21$$

$$3p = 21 + 3 = 24$$

$$p = 24 \div 3 = 8$$

$$p = 8$$

3

 / 3

44 Solve $2(y - 4) = 3y - 6$

$$\text{Expand: } 2y - 8 = 3y - 6$$

$$-y - 8 = -6$$

$$y = -2$$

3

 / 3

45 (a) Solve $b + b + b + 6 = 27$

(b) Solve $35 - 6y = -31$

$$(a) 3b = 27 - 6 = 21, \text{ so } b = 7$$

$$(b) 6y = 35 - -31 = 66$$

$$y = 66 \div 6 = 11$$

$$(a) b = 7; (b) y = 11$$

3

 / 3

46 Solve $5(y + 2) + 6(y - 1) = 81$

Expand: $11y + 4 = 81$

$11y = 77$

$y = 7$

3 / 3

47 Solve $2(p - 4) = 4p - 2$

Expand: $2p - 8 = 4p - 2$

$-2p - 8 = -2$

$p = -3$

3 / 3

48 (a) Solve $m - 18 = -11$

(b) Solve $9b - 17 = -8$

(c) Solve $\frac{5y}{3} = 25$

(a) $m = -11 + 18 = 7$

(b) $9b = -8 + 17 = 9$

$b = 9 \div 9 = 1$

(c) $5y = 25 \times 3 = 75$

$y = 75 \div 5 = 15$

(a) $m = 7$; (b) $b = 1$; (c) $y = 15$

3 / 3

49 Solve $3(x + 4) + 5(x - 1) = 39$

Expand: $8x + 7 = 39$

$8x = 32$

$x = 4$

3 / 3

50 Solve $6(a + 3) + 5(a - 1) = -9$

Expand: $11a + 13 = -9$

$11a = -22$

$a = -2$

3 / 3