2.10 Solving One and Two Step Equations: Test Pack

Calculators not allowed · about 55 minutes

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Solve the equations. Write your answer for each part.

(a) x + 5 = 12 **(1)**

.....

(b) y - 3 = 4 **(1)**

.....

(c) 2a = 10 **(1)**

.....

(d) b/4 = 3 **(1)**

.....

2 Solve the equation 5 - 2y = 11. Show your steps.

(2)

3 The cost, C pounds, of hiring a ladder for h days is given by C = 22 + 8h.
Work out the cost of hiring the ladder for 11 days.

(2)

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4 Solve t - 2 = -14

(1)

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5 Solve n + 7 = 11

(1)

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6 The cost, C pounds, of hiring a ladder for h days is given by C = 48 + 6h.
The total cost is £60. Work out the number of days.

(3)

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7 The cost, C pounds, of hiring a ladder for h days is given by C = 32 + 5h.
Work out the cost of hiring the ladder for 11 days.

(2)

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8 A rectangle has length (x + 8) cm and width 5 cm. Its area is 100 cm². Form an equation and find x.

Diagram NOT accurately drawn



100 cm²

(3)

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9 The sides of a triangle, in centimetres, are (x + 5), 5x and (6x - 5). The perimeter is 96 cm.
(a) Form and simplify an equation in x.
(b) Solve it to find x.

(4)

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10 Solve m/3 = -9

(1)

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11 Solve m - 18 = -12

(1)

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12 The cost, C pounds, of hiring a ladder for h days is given by C = 28 + 2h.
The total cost is £42. Work out the number of days.

(3)

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13 Solve 6t = 18

(1)

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14 The cost, C pounds, of hiring a ladder for h days is given by C = 37 + 8h.
The total cost is £85. Work out the number of days.

(3)

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15 The cost, C pounds, of hiring a ladder for h days is given by C = 42 + 8h.
The total cost is £58. Work out the number of days.

(3)

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16 Solve the equation -2t - 5 = 4. Show the steps and give your answer as a fraction or decimal.

(3)

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17 Kwame thinks of a number, doubles it, then adds 9. The result is 31. Form an equation using x for Kwame's number and solve it to find x.

(3)

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18 Erin has 5 bags of marbles, each containing the same number of marbles, plus 3 loose marbles. She has 48 marbles in total. Form an equation and solve it to find how many marbles are in each bag.

(3)

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19 Solve b/5 = 4.

(1)

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Mark scheme · 2.10 Solving One and Two Step Equations: Test Pack

Question 1

(a) x = 7 cao — B1

(a) Answer: **7**

(b) y = 7 cao — B1

(b) Answer: **7**

(c) a = 5 cao — B1

(c) Answer: **5**

(d) b = 12 cao — B1

(d) Answer: **12**

Question 2

subtract 5 from both sides to give -2y = 6 — M1

y = -3 cao — A1

Answer: **-3**

Question 3

substitutes h = 11: 22 + 8 x 11 — M1

£110 cao — A1

Answer: **£110**

Question 4

t = -12 cao — B1

Answer: **t = -12**

Question 5

n = 4 cao — B1

Answer: **n = 4**

Question 6

48 + 6h = 60 — M1

6h = 12 or equivalent — M1

2 (days) cao — A1

Answer: **2 days**

Question 7

substitutes h = 11: 32 + 5 x 11 — M1

£87 cao — A1

Answer: **£87**

Question 8

5(x + 8) = 100 — M1

correct method to solve — M1

x = 12 cao — A1

Answer: **x = 12**

Question 9

adds the three sides — M1

12x = 96 — A1

correct method to solve — M1

x = 8 cao — A1

Answer: **(a) 12x = 96, (b) x = 8**

Question 10

m = -27 cao — B1

Answer: **m = -27**

Question 11

m = 6 cao — B1

Answer: **m = 6**

Question 12

28 + 2h = 42 — M1

2h = 14 or equivalent — M1

7 (days) cao — A1

Answer: **7 days**

Question 13

t = 3 cao — B1

Answer: **t = 3**

Question 14

37 + 8h = 85 — M1

8h = 48 or equivalent — M1

6 (days) cao — A1

Answer: **6 days**

Question 15

42 + 8h = 58 — M1

8h = 16 or equivalent — M1

2 (days) cao — A1

Answer: **2 days**

Question 16

add 5 to both sides to give -2t = 9 — M1

divide both sides by -2 to give t = -9/2 — M1

t = -9/2 or t = -4.5 cao — A1

Answer: **-9/2**

Question 17

forms 2x + 9 = 31 — M1

correct rearrangement, e.g. 2x = 22 — M1

x = 11 cao — A1

Answer: **x = 11**

Question 18

forms 5x + 3 = 48 — M1

correct rearrangement, e.g. 5x = 45 — M1

x = 9 cao — A1

Answer: **x = 9**

Question 19

b = 20 cao — B1

Answer: **b = 20**

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