2.9 Solving One Step Equations: Test Pack

EDEXCEL 1MA1 · Calculator allowed · about 60 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Solve each equation.

(a) x + 4 = 9 **(1)**

.....

(b) x - 3 = 8 **(1)**

.....

(c) 6 + x = 10 **(1)**

.....

(Total for Question 1 is 3 marks)

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2 9x = 63

Circle the letter next to the correct solution to the equation.

- ☐ A) x = 6
- ☐ B) x = 7
- ☐ C) x = 54
- ☐ D) x = 72

(Total for Question 2 is 1 mark)

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3 Solve 3x = 15.

(Total for Question 3 is 1 mark)

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4 Solve

$x - 2.7 = 5.3$

(Total for Question 4 is 2 marks)

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5 I think of a number. I add 12. The answer is 23. What is my number?

(Total for Question 5 is 2 marks)

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6 Solve $x - 8 = 8$

(Total for Question 6 is 2 marks)

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7 Kwame thinks of a number, n. He adds 6 to it. His answer is 13.

Form an equation in terms of n and solve it to find Kwame's number.

(Total for Question 7 is 2 marks)

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8 The perimeter of an equilateral triangle is 75 cm. Each side has length $5x$ cm. Work out the value of x.

(Total for Question 8 is 2 marks)

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9 I think of a number. I add 10. The answer is 35. What is my number?

(Total for Question 9 is 2 marks)

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10 Solve $2x = 1$. Give your answer as a fraction or a decimal.

(Total for Question 10 is 2 marks)

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11 Tickets for the school fair cost £3 each.

A parent buys n tickets and spends £24 in total.

Form an equation in terms of n and solve it to find how many tickets the parent bought.

(Total for Question 11 is 2 marks)

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12 Chloe is solving the equation $x - 7 = 15$. Her working is shown below, but her final answer is wrong.

$x - 7 = 15$
$x = 15 - 7$
$x = 8$

(a) Explain the mistake Chloe has made. **(1)**

(b) Work out the correct value of x. **(1)**

(Total for Question 12 is 2 marks)

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13 Show that x = -4 is the solution to the equation

x + 9 = 5

(Total for Question 13 is 2 marks)

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14 Solve each equation.

(a) x + 3.6 = 9.2 **(2)**

(b) x - 4.8 = 2.5 **(2)**

(Total for Question 14 is 4 marks)

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15 Match each equation to its solution. Each solution on the right is used exactly once: -9, 4, 16, 20

(a) $x + 5 = 9$ **(1)**

- ☐ -9
- ☐ 4
- ☐ 16
- ☐ 20

(b) $x - 5 = -14$ **(1)**

- ☐ -9
- ☐ 4
- ☐ 16
- ☐ 20

(c) $4x = 64$ **(1)**

- ☐ -9
- ☐ 4
- ☐ 16
- ☐ 20

(d) $x / 4 = 5$ **(1)**

- ☐ -9
- ☐ 4
- ☐ 16
- ☐ 20

(Total for Question 15 is 4 marks)

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16 Solve $-3k = 18$.

(Total for Question 16 is 1 mark)

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17 The temperature in Leeds at 6 am was t °C. By 9 am the temperature had risen by 9°C to reach 2°C.

Form an equation and solve it to find t, the temperature at 6 am.

(Total for Question 17 is 3 marks)

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18 Solve

$x / (-8) = -3.5$

(Total for Question 18 is 2 marks)

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19 Solve $-(1/3)\ a = 9$. (Multiply both sides to isolate a.)

(Total for Question 19 is 2 marks)

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20 Solve $5 = -x/2$. Give your answer exactly.

(Total for Question 20 is 2 marks)

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Mark scheme · 2.9 Solving One Step Equations: Test Pack

A correct answer earns full marks unless the question asks for working, a method, proof or explanation.

Question 1

(a) x = 5 cao **B1**

(a) Answer: x = 5

(b) x = 11 cao **B1**

(b) Answer: x = 11

(c) x = 4 cao **B1**

(c) Answer: x = 4

Question 2

B circled, cao **B1**

Answer: B) x = 7

Question 3

x = 5 cao **B1**

Answer: 5

Question 4

2.7 added to both sides oe **M1**

x = 8 cao **A1**

Answer: x = 8

Question 5

forms an equation or uses an inverse operation **M1**

11 cao **A1**

Answer: 11

Question 6

uses the inverse operation on both sides **M1**

x = 16 cao **A1**

Answer: x = 16

Question 7

correct equation formed, n + 6 = 13 oe **M1**

n = 7 cao **A1**

Answer: n = 7

Question 8

3 x 5x = 75 or 5x = 25 **M1**

x = 5 cao **A1**

Answer: x = 5

Question 9

forms an equation or uses an inverse operation **M1**

25 cao **A1**

Answer: 25

Question 10

divides both sides by 2 **M1**

x = 0.5 oe **A1**

Answer: x = 0.5

Question 11

correct equation formed, 3n = 24 oe **M1**

n = 8 cao **A1**

Answer: n = 8

Question 12

(a) correct explanation given, e.g. she subtracted 7 from 15 instead of adding 7 to both sides oe **C1**

(a) Answer: She should have added 7 to both sides, not subtracted it.

(b) x = 22 cao **B1**

(b) Answer: x = 22

Question 13

-4 substituted into x + 9, -4 + 9 = 5 seen **M1**

5 = 5 stated, so x = -4 is a correct solution, cso **A1**

Answer: -4 + 9 = 5, which equals the right-hand side, so x = -4 is correct.

Question 14

(a) 3.6 subtracted from both sides oe **M1**

(a) x = 5.6 cao **A1**

(a) Answer: x = 5.6

(b) 4.8 added to both sides oe **M1**

(b) x = 7.3 cao **A1**

(b) Answer: x = 7.3

Question 15

(a) matched to 4 cao **B1**

(a) Answer: 4

(b) matched to -9 cao **B1**

(b) Answer: -9

(c) matched to 16 cao **B1**

(c) Answer: 16

(d) matched to 20 cao **B1**

(d) Answer: 20

Question 16

k = -6 cao **B1**

Answer: -6

Question 17

correct equation formed, t + 9 = 2 oe **M1**

t = -7 cao **A1**

correct interpretation stated, temperature at 6 am was -7°C **C1**

Answer: t = -7°C

Question 18

both sides multiplied by -8 oe **M1**

x = 28 cao **A1**

Answer: x = 28

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Question 19

multiply both sides by -3 or show (-1/3)a * -3 = 9 * -3 **M1**

a = -27 cao **A1**

Answer: -27

Question 20

multiply both sides by -2 or show -x/2 * -2 = 5 * -2 **M1**

x = -10 cao **A1**

Answer: -10

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