2.108 Substitution and Formulae in Words: 30-minute Pack

Total Marks

GL ASSESSMENT GL-11PLUS-MATHS · Calculators not allowed · about 30 minutes

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 The cost of a taxi, C pounds, is given by C = 30 + 4n, where n is the number of miles. What is the cost for 2 miles?

- ☐ A) £38.00
- ☐ B) £64.00
- ☐ C) £39.00
- ☐ D) £68.00
- ☐ E) £36.00

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2 Work out the value of 9x + 4y when x = 3 and y = 2.

- ☐ A) 18
- ☐ B) 65
- ☐ C) 35
- ☐ D) 34
- ☐ E) 30

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3 The cost of a hall hire, C pounds, is given by C = 15 + 7n, where n is the number of hours. What is the cost for 12 hours?

- ☐ A) £100.00
- ☐ B) £264.00
- ☐ C) £187.00
- ☐ D) £99.00
- ☐ E) £1,260.00

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4 The cost of a hall hire, C pounds, is given by C = 25 + 7n, where n is the number of hours. What is the cost for 11 hours?

- [ ] A) £282.00
- [ ] B) £102.00
- [ ] C) £77.00
- [ ] D) £352.00
- [ ] E) £101.00

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5 Work out the value of 44 - 5n when n = 3.

- [ ] A) 29
- [ ] B) 117
- [ ] C) 36
- [ ] D) 9
- [ ] E) 42

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6 The cost of a taxi, C pounds, is given by C = 8 + 4n, where n is the number of miles. What is the cost for 2 miles?

- [ ] A) £64.00
- [ ] B) £20.00
- [ ] C) £16.00
- [ ] D) £15.00
- [ ] E) £24.00

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7 The cost of a hall hire, C pounds, is given by C = 30 + 5n, where n is the number of hours. What is the cost for 7 hours?

- [ ] A) £245.00
- [ ] B) £1,050.00
- [ ] C) £215.00
- [ ] D) £66.00
- [ ] E) £65.00

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8 If G = 2(a + b) and a = 3, b = 4, what is G?

- ☐ A) 7
- ☐ B) 12
- ☐ C) 10
- ☐ D) 14
- ☐ E) 24

---

9 Work out the value of 5(n + 9) when n = 9.

- ☐ A) 91
- ☐ B) 90
- ☐ C) 54
- ☐ D) 23
- ☐ E) 518

---

10 Work out the value of 4(n + 2) when n = 5.

- ☐ A) 29
- ☐ B) 28
- ☐ C) 11
- ☐ D) 27
- ☐ E) 22

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11 The cost of a party entertainer, C pounds, is given by C = 8 + 6n, where n is the number of children. What is the cost for 10 children?

- ☐ A) £480.00
- ☐ B) £140.00
- ☐ C) £86.00
- ☐ D) £60.00
- ☐ E) £68.00

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12 Work out the value of 9(n + 6) when n = 9.

- [ ] A) 135
- [ ] B) 915
- [ ] C) 24
- [ ] D) 87
- [ ] E) 90

---

13 Work out the value of 7(n + 6) when n = 2.

- [ ] A) 56
- [ ] B) 84
- [ ] C) 55
- [ ] D) 20
- [ ] E) 15

---

14 The cost of a party entertainer, C pounds, is given by C = 20 + 8n, where n is the number of children. What is the cost for 6 children?

- [ ] A) £168.00
- [ ] B) £128.00
- [ ] C) £68.00
- [ ] D) £69.00
- [ ] E) £48.00

---

15 Work out the value of 6(n + 7) when n = 7.

- [ ] A) 20
- [ ] B) 614
- [ ] C) 49
- [ ] D) 84
- [ ] E) 85

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16 The cost of a hall hire, C pounds, is given by C = 8 + 8n, where n is the number of hours. What is the cost for 11 hours?

- [ ] A) £95.00
- [ ] B) £704.00
- [ ] C) £176.00
- [ ] D) £88.00
- [ ] E) £96.00

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17 The number of tiles T needed is given by T = (length + width) x 2. If length = 5 and width = 2, find T.

- [ ] A) 15
- [ ] B) 14
- [ ] C) 10
- [ ] D) 20
- [ ] E) 12

---

18 Work out the value of 4x + 6y when x = 5 and y = 2.

- [ ] A) 38
- [ ] B) 32
- [ ] C) 33
- [ ] D) 107
- [ ] E) 70

---

19 The cost of a taxi, C pounds, is given by C = 15 + 5n, where n is the number of miles. What is the cost for 10 miles?

- [ ] A) £30.00
- [ ] B) £50.00
- [ ] C) £200.00
- [ ] D) £65.00
- [ ] E) £155.00

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20 The cost of a hall hire, C pounds, is given by C = 8 + 8n, where n is the number of hours. What is the cost for 13 hours?

- [ ] A) £104.00
- [ ] B) £112.00
- [ ] C) £832.00
- [ ] D) £29.00
- [ ] E) £208.00

---

21 Work out the value of $9n^2 + 2$ when n = 5.

- [ ] A) 227
- [ ] B) 92
- [ ] C) 226
- [ ] D) 47
- [ ] E) 2,027

---

22 The cost of a hall hire, C pounds, is given by C = 8 + 3n, where n is the number of hours. What is the cost for 14 hours?

- [ ] A) £25
- [ ] B) £154
- [ ] C) £50
- [ ] D) £115
- [ ] E) £336

---

23 The cost of a party entertainer, C pounds, is given by C = 20 + 3n, where n is the number of children. What is the cost for 14 children?

- [ ] A) £62.00
- [ ] B) £37.00
- [ ] C) £63.00
- [ ] D) £322.00
- [ ] E) £283.00

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24 Work out the value of $7(n + 3)$ when $n = 3$.

- [ ] A) 13
- [ ] B) 24
- [ ] C) 43
- [ ] D) 42
- [ ] E) 41

---

25 The cost of a party entertainer, C pounds, is given by $C = 10 + 2n$, where n is the number of children. What is the cost for 8 children?

- [ ] A) £27.00
- [ ] B) £82.00
- [ ] C) £26.00
- [ ] D) £160.00
- [ ] E) £96.00

---

26 Work out the value of $9n^2 + 4$ when $n = 6$.

- [ ] A) 2,920
- [ ] B) 328
- [ ] C) 58
- [ ] D) 1,296
- [ ] E) 112

---

27 The cost of a hall hire, C pounds, is given by $C = 15 + 4n$, where n is the number of hours. What is the cost for 11 hours?

- [ ] A) £209.00
- [ ] B) £169.00
- [ ] C) £44.00
- [ ] D) £59.00
- [ ] E) £58.00

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28 Work out the value of 61 - 7n when n = 6.

- [ ] A) 19
- [ ] B) 60
- [ ] C) 103
- [ ] D) 324
- [ ] E) 15

---

29 The cost of a taxi, C pounds, is given by C = 25 + 9n, where n is the number of miles. What is the cost for 4 miles?

- [ ] A) £38.00
- [ ] B) £136.00
- [ ] C) £61.00
- [ ] D) £109.00
- [ ] E) £60.00

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30 Work out the value of 3(n + 8) when n = 5.

- [ ] A) 120
- [ ] B) 39
- [ ] C) 38
- [ ] D) 16
- [ ] E) 23

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31 The distance D in km between two towns is D = 3m + 2n where m = 4 and n = 5. Calculate D.

(2)

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Mark scheme · 2.108 Substitution and Formulae in Words: 30-minute Pack

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

Question 1

correct option A (£38.00) cao **B1**

Answer: A) £38.00

Question 2

correct option C (35) cao **B1**

Answer: C) 35

Question 3

correct option D (£99.00) cao **B1**

Answer: D) £99.00

Question 4

correct option B (£102.00) cao **B1**

Answer: B) £102.00

Question 5

correct option A (29) cao **B1**

Answer: A) 29

Question 6

correct option C (£16.00) cao **B1**

Answer: C) £16.00

Question 7

correct option E (£65.00) cao **B1**

Answer: E) £65.00

Question 8

correct option D (14) cao **B1**

Answer: D) 14

Question 9

correct option B (90) cao **B1**

Answer: B) 90

Question 10

correct option B (28) cao **B1**

Answer: B) 28

Question 11

correct option E (£68.00) cao **B1**

Answer: E) £68.00

Question 12

correct option A (135) cao **B1**

Answer: A) 135

Question 13

correct option A (56) cao **B1**

Answer: A) 56

Question 14

correct option C (£68.00) cao **B1**

Answer: C) £68.00

Question 15

correct option D (84) cao **B1**

Answer: D) 84

Question 16

correct option E (£96.00) cao **B1**

Answer: E) £96.00

Question 17

correct option B (14) cao **B1**

Answer: B) 14

Question 18

correct option B (32) cao **B1**

Answer: B) 32

Question 19

correct option D (£65.00) cao **B1**

Answer: D) £65.00

Question 20

correct option B (£112.00) cao **B1**

Answer: B) £112.00

Question 21

correct option A (227) cao **B1**

Answer: A) 227

Question 22

correct option C (£50) cao **B1**

Answer: C) £50

Question 23

correct option A (£62.00) cao **B1**

Answer: A) £62.00

Question 24

correct option D (42) cao **B1**

Answer: D) 42

Question 25

correct option C (£26.00) cao **B1**

Answer: C) £26.00

Question 26

correct option B (328) cao **B1**

Answer: B) 328

Question 27

correct option D (£59.00) cao **B1**

Answer: D) £59.00

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Question 28

correct option A (19) cao **B1**

Answer: A) 19

Question 29

correct option C (£61.00) cao **B1**

Answer: C) £61.00

Question 30

correct option B (39) cao **B1**

Answer: B) 39

Question 31

substitution 3 x 4 + 2 x 5 (= 12 + 10) seen **M1**

D = 22 km cao **A1**

Answer: D = 3 x 4 + 2 x 5 = 12 + 10 = 22 km.

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