2.108 Substitution and Formulae in Words: 1-hour Pack

GL ASSESSMENT GL-11PLUS-MATHS · Calculators not allowed · about 60 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 The cost of a hall hire, C pounds, is given by C = 12 + 4n, where n is the number of hours. What is the cost for 4 hours?

- ☐ A) £192.00
- ☐ B) £64.00
- ☐ C) £52.00
- ☐ D) £28.00
- ☐ E) £20.00

---

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

- ☐ A) 51
- ☐ B) 79
- ☐ C) 16
- ☐ D) 62
- ☐ E) 63

---

3 Work out the value of $5n^2 + 6$ when n = 3.

- ☐ A) 21
- ☐ B) 51
- ☐ C) 36
- ☐ D) 50
- ☐ E) 231

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4 The cost of a hall hire, C pounds, is given by C = 10 + 8n, where n is the number of hours. What is the cost for 7 hours?

- [ ] A) £67.00
- [ ] B) £126.00
- [ ] C) £66.00
- [ ] D) £65.00
- [ ] E) £78.00

---

5 The cost of a party entertainer, C pounds, is given by C = 8 + 5n, where n is the number of children. What is the cost for 15 children?

- [ ] A) £125.00
- [ ] B) £28.00
- [ ] C) £82.00
- [ ] D) £83.00
- [ ] E) £195.00

---

6 Work out the value of 6n + 8 when n = 9.

- [ ] A) 63
- [ ] B) 102
- [ ] C) 77
- [ ] D) 62
- [ ] E) 126

---

7 The cost of a taxi, C pounds, is given by C = 5 + 2n, where n is the number of miles. What is the cost for 11 miles?

- [ ] A) £22.00
- [ ] B) £27.00
- [ ] C) £77.00
- [ ] D) £110.00
- [ ] E) £57.00

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8 The cost of a taxi, C pounds, is given by C = 12 + 6n, where n is the number of miles. What is the cost for 6 miles?

- [ ] A) £108.00
- [ ] B) £24.00
- [ ] C) £48.00
- [ ] D) £36.00
- [ ] E) £78.00

---

9 Work out the value of 9n + 6 when n = 3.

- [ ] A) 45
- [ ] B) 99
- [ ] C) 32
- [ ] D) 34
- [ ] E) 33

---

10 The cost of a party entertainer, C pounds, is given by C = 8 + 3n, where n is the number of children. What is the cost for 6 children?

- [ ] A) £27.00
- [ ] B) £26.00
- [ ] C) £17.00
- [ ] D) £51.00
- [ ] E) £66.00

---

11 Work out the value of 8x + 8y when x = 8 and y = 2.

- [ ] A) 80
- [ ] B) 160
- [ ] C) 1,024
- [ ] D) 170
- [ ] E) 79

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12 The cost of a party entertainer, C pounds, is given by C = 12 + 3n, where n is the number of children. What is the cost for 14 children?

- [ ] A) £210.00
- [ ] B) £29.00
- [ ] C) £54.00
- [ ] D) £171.00
- [ ] E) £504.00

---

13 Work out the value of 2n + 8 when n = 7.

- [ ] A) 6
- [ ] B) 70
- [ ] C) 35
- [ ] D) 22
- [ ] E) 17

---

14 Work out the value of 37 - 5n when n = 3.

- [ ] A) 35
- [ ] B) 22
- [ ] C) 29
- [ ] D) 16
- [ ] E) 96

---

15 The cost of a hall hire, C pounds, is given by C = 5 + 7n, where n is the number of hours. What is the cost for 3 hours?

- [ ] A) £26.00
- [ ] B) £27.00
- [ ] C) £22.00
- [ ] D) £15.00
- [ ] E) £36.00

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16 Work out the value of 13 - 2n when n = 3.

- ☐ A) 33
- ☐ B) 19
- ☐ C) 14
- ☐ D) 8
- ☐ E) 7

---

17 Work out the value of 32 - 5n when n = 2.

- ☐ A) 42
- ☐ B) 29
- ☐ C) 20
- ☐ D) 22
- ☐ E) 54

---

18 The cost of a taxi, C pounds, is given by C = 30 + 12n, where n is the number of miles. What is the cost for 7 miles?

- ☐ A) £222.00
- ☐ B) £113.00
- ☐ C) £114.00
- ☐ D) £294.00
- ☐ E) £115.00

---

19 Work out the value of $8n^2 + 8$ when n = 6.

- ☐ A) 280
- ☐ B) 296
- ☐ C) 104
- ☐ D) 297
- ☐ E) 2,312

---

20 Given Q = 2(x - 1) + 3y, find Q when x = 5 and y = 2.

(2)

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21 Work out the value of 7(n + 9) when n = 5.

- [ ] A) 315
- [ ] B) 42
- [ ] C) 21
- [ ] D) 44
- [ ] E) 98

---

22 The cost of a party entertainer, C pounds, is given by C = 10 + 5n, where n is the number of children. What is the cost for 7 children?

- [ ] A) £44.00
- [ ] B) £22.00
- [ ] C) £105.00
- [ ] D) £45.00
- [ ] E) £75.00

---

23 Work out the value of 48 - 9n when n = 5.

- [ ] A) 2
- [ ] B) 3
- [ ] C) 44
- [ ] D) 93
- [ ] E) 195

---

24 The cost of a taxi, C pounds, is given by C = 30 + 8n, where n is the number of miles. What is the cost for 3 miles?

- [ ] A) £98.00
- [ ] B) £114.00
- [ ] C) £54.00
- [ ] D) £24.00
- [ ] E) £53.00

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25 Work out the value of $4x + 3y$ when $x = 8$ and $y = 9$.

- [ ] A) 119
- [ ] B) 87
- [ ] C) 60
- [ ] D) 58
- [ ] E) 59

---

26 The cost of a taxi, C pounds, is given by $C = 15 + 8n$, where n is the number of miles. What is the cost for 8 miles?

- [ ] A) £80.00
- [ ] B) £128.00
- [ ] C) £184.00
- [ ] D) £79.00
- [ ] E) £31.00

---

27 The cost of a hall hire, C pounds, is given by $C = 25 + 12n$, where n is the number of hours. What is the cost for 15 hours?

- [ ] A) £387.00
- [ ] B) £205.00
- [ ] C) £4,500.00
- [ ] D) £555.00
- [ ] E) £204.00

---

28 Work out the value of $8x + 3y$ when $x = 6$ and $y = 3$.

- [ ] A) 119
- [ ] B) 42
- [ ] C) 99
- [ ] D) 56
- [ ] E) 57

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29 The cost of a taxi, C pounds, is given by C = 30 + 7n, where n is the number of miles. What is the cost for 10 miles?

- [ ] A) £370
- [ ] B) £101
- [ ] C) £100
- [ ] D) £307
- [ ] E) £47

---

30 Work out the value of 3n + 4 when n = 6.

- [ ] A) 42
- [ ] B) 40
- [ ] C) 23
- [ ] D) 22
- [ ] E) 14

---

31 The cost of a party entertainer, C pounds, is given by C = 20 + 12n, where n is the number of children. What is the cost for 3 children?

- [ ] A) £56.00
- [ ] B) £57.00
- [ ] C) £96.00
- [ ] D) £72.00
- [ ] E) £720.00

---

32 Work out the value of 8n + 9 when n = 3.

- [ ] A) 33
- [ ] B) 34
- [ ] C) 92
- [ ] D) 51
- [ ] E) 32

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33 Work out the value of $6x + 7y$ when $x = 6$ and $y = 3$.

- [ ] A) 60
- [ ] B) 139
- [ ] C) 22
- [ ] D) 57
- [ ] E) 117

---

34 The cost of a taxi, C pounds, is given by $C = 15 + 7n$, where n is the number of miles. What is the cost for 6 miles?

- [ ] A) £132.00
- [ ] B) £97.00
- [ ] C) £42.00
- [ ] D) £56.00
- [ ] E) £57.00

---

35 Work out the value of $7n + 3$ when $n = 7$.

- [ ] A) 80
- [ ] B) 52
- [ ] C) 53
- [ ] D) 70
- [ ] E) 46

---

36 The cost of a party entertainer, C pounds, is given by $C = 25 + 6n$, where n is the number of children. What is the cost for 9 children?

- [ ] A) £231.00
- [ ] B) £1,350.00
- [ ] C) £78.00
- [ ] D) £279.00
- [ ] E) £79.00

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37 Work out the value of $7n^2 + 5$ when $n = 2$.

- ☐ A) 201
- ☐ B) 32
- ☐ C) 19
- ☐ D) 33
- ☐ E) 140

---

38 The cost of a hall hire, C pounds, is given by $C = 25 + 5n$, where n is the number of hours. What is the cost for 4 hours?

- ☐ A) £45.00
- ☐ B) £120.00
- ☐ C) £46.00
- ☐ D) £105.00
- ☐ E) £44.00

---

39 A gardener uses formula $S = (p + q) \times 4$ where p is the number of pots and q is the number of seed trays. If $p = 7$ and $q = 3$, find S. Then find q if $S = 40$ and $p = 5$.

(2)

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

- ☐ A) £96.00
- ☐ B) £46.00
- ☐ C) £66.00
- ☐ D) £47.00
- ☐ E) £360.00

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41 Work out the value of 9n + 2 when n = 9.

- [ ] A) 99
- [ ] B) 83
- [ ] C) 79
- [ ] D) 20
- [ ] E) 101

---

42 The cost of a taxi, C pounds, is given by C = 5 + 9n, where n is the number of miles. What is the cost for 3 miles?

- [ ] A) £32.00
- [ ] B) £24.00
- [ ] C) £42.00
- [ ] D) £31.00
- [ ] E) £135.00

---

43 The cost of a hall hire, C pounds, is given by C = 20 + 5n, where n is the number of hours. What is the cost for 3 hours?

- [ ] A) £75.00
- [ ] B) £300.00
- [ ] C) £28.00
- [ ] D) £65.00
- [ ] E) £35.00

---

44 Work out the value of 6n + 8 when n = 6.

- [ ] A) 43
- [ ] B) 28
- [ ] C) 44
- [ ] D) 84
- [ ] E) 74

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45 The cost of a party entertainer, C pounds, is given by C = 15 + 8n, where n is the number of children. What is the cost for 4 children?

- [ ] A) £27.00
- [ ] B) £47.00
- [ ] C) £92.00
- [ ] D) £32.00
- [ ] E) £68.00

---

46 The cost of a taxi, C pounds, is given by C = 12 + 5n, where n is the number of miles. What is the cost for 9 miles?

- [ ] A) £26.00
- [ ] B) £153.00
- [ ] C) £57.00
- [ ] D) £540.00
- [ ] E) £113.00

---

47 Work out the value of 6n + 9 when n = 2.

- [ ] A) 21
- [ ] B) 22
- [ ] C) 30
- [ ] D) 71
- [ ] E) 17

---

48 The cost of a hall hire, C pounds, is given by C = 15 + 2n, where n is the number of hours. What is the cost for 6 hours?

- [ ] A) £12.00
- [ ] B) £102.00
- [ ] C) £92.00
- [ ] D) £27.00
- [ ] E) £28.00

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49 Work out the value of $9n^2 + 8$ when $n = 8$.

- [ ] A) 5,192
- [ ] B) 568
- [ ] C) 80
- [ ] D) 152
- [ ] E) 584

---

50 The cost of a party entertainer, C pounds, is given by $C = 30 + 8n$, where n is the number of children. What is the cost for 6 children?

- [ ] A) £78.00
- [ ] B) £188.00
- [ ] C) £48.00
- [ ] D) £228.00
- [ ] E) £79.00

---

51 Work out the value of $7n + 6$ when $n = 9$.

- [ ] A) 70
- [ ] B) 57
- [ ] C) 69
- [ ] D) 117
- [ ] E) 85

---

52 Work out the value of $9(n + 3)$ when $n = 6$.

- [ ] A) 63
- [ ] B) 81
- [ ] C) 57
- [ ] D) 18
- [ ] E) 99

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53 The cost of a party entertainer, C pounds, is given by C = 12 + 12n, where n is the number of children. What is the cost for 4 children?

- [ ] A) £576
- [ ] B) £96
- [ ] C) £60
- [ ] D) £59
- [ ] E) £48

---

54 Work out the value of 46 - 4n when n = 5.

- [ ] A) 47
- [ ] B) 210
- [ ] C) 66
- [ ] D) 26
- [ ] E) 37

---

55 Work out the value of 9x + 7y when x = 5 and y = 6.

- [ ] A) 27
- [ ] B) 176
- [ ] C) 87
- [ ] D) 89
- [ ] E) 86

---

56 The cost of a party entertainer, C pounds, is given by C = 30 + 5n, where n is the number of children. What is the cost for 2 children?

- [ ] A) £40
- [ ] B) £65
- [ ] C) £70
- [ ] D) £41
- [ ] E) £300

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57 Work out the value of 9(n + 4) when n = 2.

- [ ] A) 22
- [ ] B) 54
- [ ] C) 27
- [ ] D) 15
- [ ] E) 72

---

58 Work out the value of 26 - 2n when n = 9.

- [ ] A) 216
- [ ] B) 8
- [ ] C) 3
- [ ] D) 33
- [ ] E) 44

---

59 The cost of a party entertainer, C pounds, is given by C = 5 + 3n, where n is the number of children. What is the cost for 8 children?

- [ ] A) £24.00
- [ ] B) £30.00
- [ ] C) £43.00
- [ ] D) £29.00
- [ ] E) £64.00

---

60 Work out the value of 9x + 4y when x = 7 and y = 2.

- [ ] A) 504
- [ ] B) 46
- [ ] C) 71
- [ ] D) 70
- [ ] E) 117

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61 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 2 hours?

- [ ] A) £24.00
- [ ] B) £128.00
- [ ] C) £16.00
- [ ] D) £25.00
- [ ] E) £32.00

---

62 Work out the value of 3n + 2 when n = 3.

- [ ] A) 11
- [ ] B) 35
- [ ] C) 15
- [ ] D) 8
- [ ] E) 7

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Mark scheme · 2.108 Substitution and Formulae in Words: 1-hour Pack

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

Question 1

correct option D (£28.00) cao **B1**

Answer: D) £28.00

Question 2

correct option E (63) cao **B1**

Answer: E) 63

Question 3

correct option B (51) cao **B1**

Answer: B) 51

Question 4

correct option C (£66.00) cao **B1**

Answer: C) £66.00

Question 5

correct option D (£83.00) cao **B1**

Answer: D) £83.00

Question 6

correct option D (62) cao **B1**

Answer: D) 62

Question 7

correct option B (£27.00) cao **B1**

Answer: B) £27.00

Question 8

correct option C (£48.00) cao **B1**

Answer: C) £48.00

Question 9

correct option E (33) cao **B1**

Answer: E) 33

Question 10

correct option B (£26.00) cao **B1**

Answer: B) £26.00

Question 11

correct option A (80) cao **B1**

Answer: A) 80

Question 12

correct option C (£54.00) cao **B1**

Answer: C) £54.00

Question 13

correct option D (22) cao **B1**

Answer: D) 22

Question 14

correct option B (22) cao **B1**

Answer: B) 22

Question 15

correct option A (£26.00) cao **B1**

Answer: A) £26.00

Question 16

correct option E (7) cao **B1**

Answer: E) 7

Question 17

correct option D (22) cao **B1**

Answer: D) 22

Question 18

correct option C (£114.00) cao **B1**

Answer: C) £114.00

Question 19

correct option B (296) cao **B1**

Answer: B) 296

Question 20

substitute x = 5 and y = 2 to get 2(5 - 1) + 3 x 2 seen **M1**

Q = 14 cao **A1**

Answer: Q = 2(5 - 1) + 3 x 2 = 2 x 4 + 6 = 8 + 6 = 14.

Question 21

correct option E (98) cao **B1**

Answer: E) 98

Question 22

correct option D (£45.00) cao **B1**

Answer: D) £45.00

Question 23

correct option B (3) cao **B1**

Answer: B) 3

Question 24

correct option C (£54.00) cao **B1**

Answer: C) £54.00

Question 25

correct option E (59) cao **B1**

Answer: E) 59

Question 26

correct option D (£79.00) cao **B1**

Answer: D) £79.00

Question 27

correct option B (£205.00) cao **B1**

Answer: B) £205.00

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Question 28

correct option E (57) cao **B1**

Answer: E) 57

Question 29

correct option C (£100) cao **B1**

Answer: C) £100

Question 30

correct option D (22) cao **B1**

Answer: D) 22

Question 31

correct option A (£56.00) cao **B1**

Answer: A) £56.00

Question 32

correct option A (33) cao **B1**

Answer: A) 33

Question 33

correct option D (57) cao **B1**

Answer: D) 57

Question 34

correct option E (£57.00) cao **B1**

Answer: E) £57.00

Question 35

correct option B (52) cao **B1**

Answer: B) 52

Question 36

correct option E (£79.00) cao **B1**

Answer: E) £79.00

Question 37

correct option D (33) cao **B1**

Answer: D) 33

Question 38

correct option A (£45.00) cao **B1**

Answer: A) £45.00

Question 39

substitutions and rearrangement seen **M1**

S = 40 and q = 5 cao **A1**

Answer: First: S = (7 + 3) x 4 = 10 x 4 = 40. Second: 40 = (5 + q) x 4 so 10 = 5 + q and q = 5.

Question 40

correct option B (£46.00) cao **B1**

Answer: B) £46.00

Question 41

correct option B (83) cao **B1**

Answer: B) 83

Question 42

correct option A (£32.00) cao **B1**

Answer: A) £32.00

Question 43

correct option E (£35.00) cao **B1**

Answer: E) £35.00

Question 44

correct option C (44) cao **B1**

Answer: C) 44

Question 45

correct option B (£47.00) cao **B1**

Answer: B) £47.00

Question 46

correct option C (£57.00) cao **B1**

Answer: C) £57.00

Question 47

correct option A (21) cao **B1**

Answer: A) 21

Question 48

correct option D (£27.00) cao **B1**

Answer: D) £27.00

Question 49

correct option E (584) cao **B1**

Answer: E) 584

Question 50

correct option A (£78.00) cao **B1**

Answer: A) £78.00

Question 51

correct option C (69) cao **B1**

Answer: C) 69

Question 52

correct option B (81) cao **B1**

Answer: B) 81

Question 53

correct option C (£60) cao **B1**

Answer: C) £60

Question 54

correct option D (26) cao **B1**

Answer: D) 26

Question 55

correct option C (87) cao **B1**

Answer: C) 87

Question 56

correct option A (£40) cao **B1**

Answer: A) £40

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Question 57

correct option B (54) cao **B1**

Answer: B) 54

Question 58

correct option B (8) cao **B1**

Answer: B) 8

Question 59

correct option D (£29.00) cao **B1**

Answer: D) £29.00

Question 60

correct option C (71) cao **B1**

Answer: C) 71

Question 61

correct option A (£24.00) cao **B1**

Answer: A) £24.00

Question 62

correct option A (11) cao **B1**

Answer: A) 11

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