2.88 Working Backwards with Inverse Operations: 1-hour Pack

Total Marks

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

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Callum spends £12, then spends £6, then spends two thirds of what is left. Callum has £138 left. How much did Callum have at the start?

- [ ] A) £276.00
- [ ] B) £294.00
- [ ] C) £432.00
- [ ] D) £156.00
- [ ] E) £431.00

---

2 I think of a number and then subtract 10, then divide by 2. The result is 6. What was my number?

- [ ] A) 23
- [ ] B) 32
- [ ] C) -2
- [ ] D) 21
- [ ] E) 22

---

3 Zainab spends a quarter of their money, then spends a third of what is left, then spends £15. Zainab has £75 left. How much did Zainab have at the start?

- [ ] A) £180.00
- [ ] B) £90.00
- [ ] C) £150.00
- [ ] D) £165.00
- [ ] E) £192.00

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4 Oliver spends a quarter of their money, then spends £9, then spends £8. Oliver has £73 left. How much did Oliver have at the start?

- [ ] A) £132.00
- [ ] B) £163.00
- [ ] C) £120.00
- [ ] D) £90.00
- [ ] E) £146.00

---

5 I think of a number and then subtract 3, then multiply by 3. The result is 42. What was my number?

- [ ] A) 20
- [ ] B) 117
- [ ] C) 15
- [ ] D) 17
- [ ] E) 16

---

6 Yusuf spends a sixth of their money, then spends £2, then spends £4. Yusuf has £154 left. How much did Yusuf have at the start?

- [ ] A) £191.00
- [ ] B) £314.00
- [ ] C) £160.00
- [ ] D) £308.00
- [ ] E) £192.00

---

7 A machine does this to a number: multiply by 3, then subtract 13. The output is 17. What was the input?

- [ ] A) 38
- [ ] B) 9
- [ ] C) 13
- [ ] D) 11
- [ ] E) 10

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8 Callum spends £7, then spends £5, then spends half of what is left. Callum has £54 left. How much did Callum have at the start?

- [ ] A) £120
- [ ] B) £66
- [ ] C) £132
- [ ] D) £93
- [ ] E) £108

---

9 I think of a number and then add 7, then multiply by 8. The result is 80. What was my number?

- [ ] A) 696
- [ ] B) 2
- [ ] C) 3
- [ ] D) 4
- [ ] E) 73

---

10 Arjun spends two thirds of their money, then spends a quarter of what is left, then spends £15. Arjun has £33 left. How much did Arjun have at the start?

- [ ] A) £66.00
- [ ] B) £192.00
- [ ] C) £191.00
- [ ] D) £81.00
- [ ] E) £48.00

---

11 Ethan spends £4, then spends a quarter of what is left, then spends two thirds of what is left. Ethan has £23 left. How much did Ethan have at the start?

- [ ] A) £27.00
- [ ] B) £46.00
- [ ] C) £95.00
- [ ] D) £96.00
- [ ] E) £50.00

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12 I think of a number and then subtract 13, then multiply by 2, then add 12. The result is 20. What was my number?

- [ ] A) 26
- [ ] B) 17
- [ ] C) 23
- [ ] D) 30
- [ ] E) 18

---

13 Kwame spends two thirds of their money, then spends £8. Kwame has £52 left. How much did Kwame have at the start?

- [ ] A) £179
- [ ] B) £168
- [ ] C) £112
- [ ] D) £60
- [ ] E) £180

---

14 Rhys spends half of their money, then spends £8. Rhys has £160 left. How much did Rhys have at the start?

- [ ] A) £328.00
- [ ] B) £337.00
- [ ] C) £336.00
- [ ] D) £248.00
- [ ] E) £168.00

---

15 I think of a number and then subtract 12, then add 13, then divide by 4. The result is 5. What was my number?

- [ ] A) 18
- [ ] B) 16
- [ ] C) 4
- [ ] D) 19
- [ ] E) 31

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16 Jack spends two thirds of their money, then spends £11. Jack has £85 left. How much did Jack have at the start?

- [ ] A) £288.00
- [ ] B) £181.00
- [ ] C) £170.00
- [ ] D) £289.00
- [ ] E) £96.00

---

17 Hamza spends £4, then spends half of what is left. Hamza has £88 left. How much did Hamza have at the start?

- [ ] A) £92
- [ ] B) £136
- [ ] C) £176
- [ ] D) £180
- [ ] E) £181

---

18 I think of a number and then multiply by 7, then add 7. The result is 42. What was my number?

- [ ] A) 4
- [ ] B) 5
- [ ] C) 12
- [ ] D) 301
- [ ] E) -1

---

19 Anya spends £15, then spends a third of what is left. Anya has £206 left. How much did Anya have at the start?

- [ ] A) £412.00
- [ ] B) £221.00
- [ ] C) £324.00
- [ ] D) £427.00
- [ ] E) £336.00

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20 I think of a number and then multiply by 4, then add 14. The result is 102. What was my number?

- [ ] A) 23
- [ ] B) 22
- [ ] C) 26
- [ ] D) 21
- [ ] E) 422

---

21 Tom spends £12, then spends half of what is left. Tom has £72 left. How much did Tom have at the start?

- [ ] A) £120.00
- [ ] B) £84.00
- [ ] C) £157.00
- [ ] D) £156.00
- [ ] E) £144.00

---

22 A machine does this to a number: add 6, then multiply by 5. The output is 120. What was the input?

- [ ] A) 114
- [ ] B) 17
- [ ] C) 19
- [ ] D) 630
- [ ] E) 18

---

23 Amara spends a third of their money, then spends £9, then spends £4. Amara has £115 left. How much did Amara have at the start?

- [ ] A) £192.00
- [ ] B) £128.00
- [ ] C) £230.00
- [ ] D) £204.00
- [ ] E) £243.00

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24 Kofi spends a third of their money, then spends half of what is left, then spends £6. Kofi has £50 left. How much did Kofi have at the start?

- [ ] A) £168.00
- [ ] B) £56.00
- [ ] C) £100.00
- [ ] D) £106.00
- [ ] E) £169.00

---

25 I think of a number and then add 11, then multiply by 5. The result is 235. What was my number?

- [ ] A) 35
- [ ] B) 37
- [ ] C) 224
- [ ] D) 1,230
- [ ] E) 36

---

26 Anya spends two thirds of their money, then spends £2, then spends a sixth of what is left. Anya has £55 left. How much did Anya have at the start?

- [ ] A) £112.00
- [ ] B) £204.00
- [ ] C) £110.00
- [ ] D) £192.00
- [ ] E) £57.00

---

27 Yusuf spends half of their money, then spends £2, then spends £7. Yusuf has £201 left. How much did Yusuf have at the start?

- [ ] A) £210.00
- [ ] B) £310.50
- [ ] C) £411.00
- [ ] D) £420.00
- [ ] E) £408.00

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28 I think of a number and then multiply by 3, then add 15, then subtract 4. The result is 95. What was my number?

- [ ] A) 296
- [ ] B) 31
- [ ] C) 28
- [ ] D) 27
- [ ] E) 29

---

29 Tariq spends half of their money, then spends £10. Tariq has £80 left. How much did Tariq have at the start?

- [ ] A) £90
- [ ] B) £180
- [ ] C) £168
- [ ] D) £170
- [ ] E) £160

---

30 Ben spends a sixth of their money, then spends £12. Ben has £18 left. How much did Ben have at the start?

- [ ] A) £36.00
- [ ] B) £37.00
- [ ] C) £33.00
- [ ] D) £30.00
- [ ] E) £48.00

---

31 I think of a number and then subtract 3, then multiply by 4, then add 11. The result is 115. What was my number?

- [ ] A) 459
- [ ] B) 30
- [ ] C) 32
- [ ] D) 28
- [ ] E) 29

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32 Jack spends half of their money, then spends £3. Jack has £117 left. How much did Jack have at the start?

- [ ] A) £234.00
- [ ] B) £237.00
- [ ] C) £178.50
- [ ] D) £240.00
- [ ] E) £120.00

---

33 A machine does this to a number: subtract 3, then multiply by 7. The output is 238. What was the input?

- [ ] A) 38
- [ ] B) 241
- [ ] C) 37
- [ ] D) 1,645
- [ ] E) 40

---

34 Isla spends two thirds of their money, then spends £5. Isla has £107 left. How much did Isla have at the start?

- [ ] A) £219.00
- [ ] B) £336.00
- [ ] C) £112.00
- [ ] D) £348.00
- [ ] E) £337.00

---

35 I think of a number and then subtract 12, then multiply by 5. The result is 35. What was my number?

- [ ] A) 19
- [ ] B) 31
- [ ] C) 115
- [ ] D) 47
- [ ] E) 20

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36 Dylan spends a third of their money, then spends a third of what is left, then spends £9. Dylan has £103 left. How much did Dylan have at the start?

- [ ] A) £253.00
- [ ] B) £240.00
- [ ] C) £112.00
- [ ] D) £215.00
- [ ] E) £252.00

---

37 Jack spends £2, then spends half of what is left, then spends £12. Jack has £113 left. How much did Jack have at the start?

- [ ] A) £253.00
- [ ] B) £240.00
- [ ] C) £264.00
- [ ] D) £252.00
- [ ] E) £127.00

---

38 A machine does this to a number: multiply by 3, then add 2. The output is 32. What was the input?

- [ ] A) 98
- [ ] B) 10
- [ ] C) 11
- [ ] D) 9
- [ ] E) 13

---

39 Rhys spends a sixth of their money, then spends £9, then spends £13. Rhys has £58 left. How much did Rhys have at the start?

- [ ] A) £138.00
- [ ] B) £84.00
- [ ] C) £96.00
- [ ] D) £97.00
- [ ] E) £80.00

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40 Amara spends £12, then spends two thirds of what is left. Amara has £24 left. How much did Amara have at the start?

- [ ] A) £84.00
- [ ] B) £36.00
- [ ] C) £60.00
- [ ] D) £96.00
- [ ] E) £52.00

---

41 A machine does this to a number: multiply by 6, then subtract 15. The output is 189. What was the input?

- [ ] A) 1,119
- [ ] B) 34
- [ ] C) 40
- [ ] D) 33
- [ ] E) 35

---

42 A machine takes a number, subtracts 4, then multiplies the result by 6. The machine shows 60. What number did the machine start with?

- [ ] A) 56
- [ ] B) 9
- [ ] C) 10
- [ ] D) 64
- [ ] E) 14

---

43 I think of a number and then multiply by 6, then add 7. The result is 193. What was my number?

- [ ] A) 37
- [ ] B) 32
- [ ] C) 30
- [ ] D) 31
- [ ] E) 1,165

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44 Grace spends a sixth of their money, then spends £12. Grace has £218 left. How much did Grace have at the start?

- [ ] A) £277.00
- [ ] B) £448.00
- [ ] C) £288.00
- [ ] D) £230.00
- [ ] E) £276.00

---

45 A machine does this to a number: add 5, then multiply by 9, then subtract 15. The output is 282. What was the input?

- [ ] A) 2,568
- [ ] B) 27
- [ ] C) 33
- [ ] D) 28
- [ ] E) 29

---

46 Grace spends £6, then spends half of what is left, then spends £14. Grace has £7 left. How much did Grace have at the start?

- [ ] A) £27.00
- [ ] B) £49.00
- [ ] C) £48.00
- [ ] D) £60.00
- [ ] E) £34.00

---

47 A machine does this to a number: subtract 14, then multiply by 8. The output is 200. What was the input?

- [ ] A) 1,488
- [ ] B) 39
- [ ] C) 53
- [ ] D) 214
- [ ] E) 40

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48 Ben spends a third of their money, then spends £15. Ben has £57 left. How much did Ben have at the start?

- [ ] A) £108.00
- [ ] B) £129.00
- [ ] C) £120.00
- [ ] D) £96.00
- [ ] E) £72.00

---

49 I think of a number and then subtract 15, then multiply by 2, then divide by 8. The result is 1. What was my number?

- [ ] A) 34
- [ ] B) 18
- [ ] C) 20
- [ ] D) 64
- [ ] E) 19

---

50 A machine does this to a number: multiply by 9, then add 10. The output is 316. What was the input?

- [ ] A) 33
- [ ] B) 34
- [ ] C) 43
- [ ] D) 2,854
- [ ] E) 35

---

51 I think of a number and then multiply by 6, then add 10. The result is 94. What was my number?

- [ ] A) 14
- [ ] B) 15
- [ ] C) 574
- [ ] D) 20
- [ ] E) 13

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52 Arjun spends £2, then spends half of what is left. Arjun has £215 left. How much did Arjun have at the start?

- [ ] A) £444.00
- [ ] B) £433.00
- [ ] C) £217.00
- [ ] D) £432.00
- [ ] E) £324.50

---

53 Kwame spends two thirds of their money, then spends £9, then spends £7. Kwame has £124 left. How much did Kwame have at the start?

- [ ] A) £140
- [ ] B) £421
- [ ] C) £264
- [ ] D) £432
- [ ] E) £420

---

54 A machine does this to a number: multiply by 8, then subtract 14. The output is 138. What was the input?

- [ ] A) 27
- [ ] B) 1,090
- [ ] C) 19
- [ ] D) 18
- [ ] E) 20

---

55 Declan spends a quarter of their money, then spends £15, then spends £3. Declan has £306 left. How much did Declan have at the start?

- [ ] A) £432.00
- [ ] B) £431.00
- [ ] C) £612.00
- [ ] D) £324.00
- [ ] E) £630.00

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56 Tom spends £11, then spends £11, then spends half of what is left. Tom has £199 left. How much did Tom have at the start?

- [ ] A) £221.00
- [ ] B) £420.00
- [ ] C) £320.50
- [ ] D) £408.00
- [ ] E) £398.00

---

57 I think of a number and then multiply by 8, then divide by 3. The result is 16. What was my number?

- [ ] A) 5
- [ ] B) 2
- [ ] C) 14
- [ ] D) 6
- [ ] E) 7

---

58 Chloe spends a third of their money, then spends £5. Chloe has £43 left. How much did Chloe have at the start?

- [ ] A) £84.00
- [ ] B) £71.00
- [ ] C) £72.00
- [ ] D) £91.00
- [ ] E) £48.00

---

59 A machine does this to a number: add 13, then subtract 7. The output is 8. What was the input?

- [ ] A) -5
- [ ] B) 14
- [ ] C) 15
- [ ] D) 3
- [ ] E) 2

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60 Grace spends two thirds of their money, then spends half of what is left, then spends £10. Grace has £6 left. How much did Grace have at the start?

- [ ] A) £96.00
- [ ] B) £97.00
- [ ] C) £22.00
- [ ] D) £12.00
- [ ] E) £16.00

---

61 Megan spends half of their money, then spends £9, then spends a third of what is left. Megan has £134 left. How much did Megan have at the start?

- [ ] A) £277
- [ ] B) £420
- [ ] C) £143
- [ ] D) £268
- [ ] E) £421

---

62 I think of a number and then subtract 3, then multiply by 6. The result is 186. What was my number?

- [ ] A) 1,098
- [ ] B) 35
- [ ] C) 189
- [ ] D) 34
- [ ] E) 33

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63 I think of a number and then subtract 9, then add 5, then multiply by 4. The result is 44. What was my number?

- ☐ A) 160
- ☐ B) 15
- ☐ C) 12
- ☐ D) 24
- ☐ E) 14

---

64 Callum spends £12, then spends half of what is left, then spends £4. Callum has £80 left. How much did Callum have at the start?

- ☐ A) £192
- ☐ B) £176
- ☐ C) £180
- ☐ D) £96
- ☐ E) £168

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Mark scheme · 2.88 Working Backwards with Inverse Operations: 1-hour Pack

Question 1

correct option C (£432.00) cao **B1**

Answer: C) £432.00

Question 2

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

Answer: E) 22

Question 3

correct option A (£180.00) cao **B1**

Answer: A) £180.00

Question 4

correct option C (£120.00) cao **B1**

Answer: C) £120.00

Question 5

correct option D (17) cao **B1**

Answer: D) 17

Question 6

correct option E (£192.00) cao **B1**

Answer: E) £192.00

Question 7

correct option E (10) cao **B1**

Answer: E) 10

Question 8

correct option A (£120) cao **B1**

Answer: A) £120

Question 9

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

Answer: C) 3

Question 10

correct option B (£192.00) cao **B1**

Answer: B) £192.00

Question 11

correct option D (£96.00) cao **B1**

Answer: D) £96.00

Question 12

correct option B (17) cao **B1**

Answer: B) 17

Question 13

correct option E (£180) cao **B1**

Answer: E) £180

Question 14

correct option C (£336.00) cao **B1**

Answer: C) £336.00

Question 15

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

Answer: D) 19

Question 16

correct option A (£288.00) cao **B1**

Answer: A) £288.00

Question 17

correct option D (£180) cao **B1**

Answer: D) £180

Question 18

correct option B (5) cao **B1**

Answer: B) 5

Question 19

correct option C (£324.00) cao **B1**

Answer: C) £324.00

Question 20

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

Answer: B) 22

Question 21

correct option D (£156.00) cao **B1**

Answer: D) £156.00

Question 22

correct option E (18) cao **B1**

Answer: E) 18

Question 23

correct option A (£192.00) cao **B1**

Answer: A) £192.00

Question 24

correct option A (£168.00) cao **B1**

Answer: A) £168.00

Question 25

correct option E (36) cao **B1**

Answer: E) 36

Question 26

correct option B (£204.00) cao **B1**

Answer: B) £204.00

Question 27

correct option D (£420.00) cao **B1**

Answer: D) £420.00

Question 28

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

Answer: C) 28

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Question 29

correct option B (£180) cao **B1**

Answer: B) £180

Question 30

correct option A (£36.00) cao **B1**

Answer: A) £36.00

Question 31

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

Answer: E) 29

Question 32

correct option D (£240.00) cao **B1**

Answer: D) £240.00

Question 33

correct option C (37) cao **B1**

Answer: C) 37

Question 34

correct option B (£336.00) cao **B1**

Answer: B) £336.00

Question 35

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

Answer: A) 19

Question 36

correct option E (£252.00) cao **B1**

Answer: E) £252.00

Question 37

correct option D (£252.00) cao **B1**

Answer: D) £252.00

Question 38

correct option B (10) cao **B1**

Answer: B) 10

Question 39

correct option C (£96.00) cao **B1**

Answer: C) £96.00

Question 40

correct option A (£84.00) cao **B1**

Answer: A) £84.00

Question 41

correct option B (34) cao **B1**

Answer: B) 34

Question 42

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

Answer: E) 14 (because 60 / 6 = 10, then 10 + 4 = 14).

Question 43

correct option D (31) cao **B1**

Answer: D) 31

Question 44

correct option E (£276.00) cao **B1**

Answer: E) £276.00

Question 45

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

Answer: D) 28

Question 46

correct option C (£48.00) cao **B1**

Answer: C) £48.00

Question 47

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

Answer: B) 39

Question 48

correct option A (£108.00) cao **B1**

Answer: A) £108.00

Question 49

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

Answer: E) 19

Question 50

correct option B (34) cao **B1**

Answer: B) 34

Question 51

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

Answer: A) 14

Question 52

correct option D (£432.00) cao **B1**

Answer: D) £432.00

Question 53

correct option E (£420) cao **B1**

Answer: E) £420

Question 54

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

Answer: C) 19

Question 55

correct option A (£432.00) cao **B1**

Answer: A) £432.00

Question 56

correct option B (£420.00) cao **B1**

Answer: B) £420.00

Question 57

correct option D (6) cao **B1**

Answer: D) 6

Question 58

correct option C (£72.00) cao **B1**

Answer: C) £72.00

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Question 59

correct option E (2) cao **B1**

Answer: E) 2

Question 60

correct option A (£96.00) cao **B1**

Answer: A) £96.00

Question 61

correct option B (£420) cao **B1**

Answer: B) £420

Question 62

correct option D (34) cao **B1**

Answer: D) 34

Question 63

correct option B (15) cao **B1**

Answer: B) 15

Question 64

correct option C (£180) cao **B1**

Answer: C) £180

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