3.18 Number Connections: 1-hour Pack

GL ASSESSMENT GL-VR-11+ · about 60 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Each question shows two number pairs written in the same style, for example: 5 (12) 7 followed by 9 (?) 6. The number in brackets is linked to the two outside numbers by a hidden rule. Work out the rule from the first pair, then apply exactly the same rule to the second pair to work out the missing number in brackets. Choose your answer from the five options given. There is only one correct answer to each question.

Worked example. 5 (15) 3 8 (?) 6 Work out the connection between the numbers in the first pair, then use the same connection to find the missing number in the second pair. **Answer: 48.** The number in brackets is the product of the two outside numbers: 5 x 3 = 15. Applying the same rule to the second pair: 8 x 6 = 48.

1 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

10 (84) 4
9 (65) 4
12 (?) 4

- [ ] A) 128
- [ ] B) 96
- [ ] C) 129
- [ ] D) 127
- [ ] E) 32

---

2 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

5 (10) 3
7 (35) 6
9 (?) 8

- [ ] A) 63
- [ ] B) 34
- [ ] C) 62
- [ ] D) 64
- [ ] E) 81

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3 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

8 (20) 4

11 (27) 6

7 (?) 3

- [ ] A) 19
- [ ] B) 17
- [ ] C) 20
- [ ] D) 11
- [ ] E) 18

---

4 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

7 (17) 4

11 (24) 9

8 (?) 6

- [ ] A) 28
- [ ] B) 30
- [ ] C) 18
- [ ] D) 19
- [ ] E) 17

---

5 8 (55) 3

9 (?) 4

- [ ] A) 25
- [ ] B) -65
- [ ] C) 36
- [ ] D) 65
- [ ] E) 18

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6 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

4 (12) 9

3 (14) 12

10 (?) 6

- [ ] A) 14
- [ ] B) 15
- [ ] C) 64
- [ ] D) 24
- [ ] E) 16

---

7 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

11 (43) 10

9 (34) 7

2 (?) 11

- [ ] A) 44
- [ ] B) 16
- [ ] C) 123
- [ ] D) 17
- [ ] E) 18

---

8 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

3 (24) 6

11 (108) 9

12 (?) 6

- [ ] A) 19
- [ ] B) 79
- [ ] C) 78
- [ ] D) 48
- [ ] E) 77

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9 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

2 (12) 6
9 (31) 4
12 (?) 12

- [ ] A) 48
- [ ] B) 156
- [ ] C) 47
- [ ] D) 49
- [ ] E) 132

---

10 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

5 (70) 7
4 (32) 4
2 (?) 4

- [ ] A) 20
- [ ] B) 15
- [ ] C) 17
- [ ] D) 10
- [ ] E) 16

---

11 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

4 (21) 3
7 (54) 11
11 (?) 2

- [ ] A) 123
- [ ] B) 38
- [ ] C) 39
- [ ] D) 40
- [ ] E) 15

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12 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

10 (120) 11

2 (32) 11

6 (?) 2

- [ ] A) 23
- [ ] B) 21
- [ ] C) 20
- [ ] D) 22
- [ ] E) 9

---

13 4 (7) 5

6 (?) 8

- [ ] A) -6
- [ ] B) 10
- [ ] C) 18
- [ ] D) -2
- [ ] E) 26

---

14 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

4 (88) 11

12 (192) 8

10 (?) 3

- [ ] A) 27
- [ ] B) 60
- [ ] C) 91
- [ ] D) 61
- [ ] E) 59

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15 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

10 (25) 5

6 (13) 5

3 (?) 3

- [ ] A) 12
- [ ] B) 6
- [ ] C) 7
- [ ] D) 5
- [ ] E) 9

---

16 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

7 (28) 3

6 (18) 3

9 (?) 4

- [ ] A) 46
- [ ] B) 36
- [ ] C) 44
- [ ] D) 45
- [ ] E) 17

---

17 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

7 (4) 3

4 (2) 2

11 (?) 7

- [ ] A) 4
- [ ] B) 128
- [ ] C) 5
- [ ] D) 3
- [ ] E) 44

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18 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

7 (35) 6
11 (22) 3
6 (?) 5

- [ ] A) 36
- [ ] B) 25
- [ ] C) 12
- [ ] D) 24
- [ ] E) 23

---

19 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

7 (32) 9
10 (26) 3
2 (?) 4

- [ ] A) 11
- [ ] B) 6
- [ ] C) 13
- [ ] D) 18
- [ ] E) 12

---

20 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

12 (30) 9
6 (30) 12
3 (?) 10

- [ ] A) 23
- [ ] B) 19
- [ ] C) 22
- [ ] D) 14
- [ ] E) 24

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21 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

10 (19) 9

12 (95) 7

9 (?) 5

- [ ] A) 32
- [ ] B) 57
- [ ] C) 56
- [ ] D) 15
- [ ] E) 55

---

22 7 (6) 3

9 (?) 5

- [ ] A) 18
- [ ] B) 4
- [ ] C) 10
- [ ] D) 56
- [ ] E) 14

---

23 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

9 (72) 7

7 (49) 6

10 (?) 2

- [ ] A) 104
- [ ] B) 30
- [ ] C) 31
- [ ] D) 29
- [ ] E) 40

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24 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

12 (36) 3

3 (12) 4

7 (?) 4

- [ ] A) 28
- [ ] B) 29
- [ ] C) 38
- [ ] D) 10
- [ ] E) 27

---

25 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

5 (21) 4

9 (73) 8

12 (?) 11

- [ ] A) 142
- [ ] B) 134
- [ ] C) 133
- [ ] D) 1
- [ ] E) 132

---

26 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

4 (10) 5

11 (17) 5

6 (?) 3

- [ ] A) 9
- [ ] B) 11
- [ ] C) 18
- [ ] D) 10
- [ ] E) 27

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27 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

5 (40) 7
6 (72) 11
4 (?) 6

- [ ] A) 27
- [ ] B) 28
- [ ] C) 29
- [ ] D) 9
- [ ] E) 2

---

28 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

4 (26) 11
5 (27) 11
11 (?) 8

- [ ] A) 28
- [ ] B) 80
- [ ] C) 26
- [ ] D) 41
- [ ] E) 27

---

29 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

11 (55) 6
10 (30) 4
5 (?) 2

- [ ] A) 5
- [ ] B) 4
- [ ] C) 6
- [ ] D) 9
- [ ] E) 14

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30 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

3 (3) 2
12 (72) 6
9 (?) 4

- [ ] A) 23
- [ ] B) 44
- [ ] C) 49
- [ ] D) 45
- [ ] E) 46

---

31 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

3 (60) 10
12 (144) 6
6 (?) 10

- [ ] A) 70
- [ ] B) 50
- [ ] C) 120
- [ ] D) 121
- [ ] E) 119

---

32 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

12 (20) 4
11 (20) 2
6 (?) 5

- [ ] A) 6
- [ ] B) 10
- [ ] C) 7
- [ ] D) 11
- [ ] E) 8

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33 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

12 (136) 8
9 (73) 8
7 (?) 6

- [ ] A) 44
- [ ] B) 8
- [ ] C) 42
- [ ] D) 43
- [ ] E) 13

---

34 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

10 (26) 6
12 (25) 3
2 (?) 7

- [ ] A) 20
- [ ] B) 19
- [ ] C) 53
- [ ] D) 51
- [ ] E) 18

---

35 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

5 (20) 2
7 (168) 12
4 (?) 7

- [ ] A) 56
- [ ] B) 55
- [ ] C) 57
- [ ] D) 65
- [ ] E) 9

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36 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

12 (108) 6

8 (39) 5

7 (?) 6

- [ ] A) 36
- [ ] B) 84
- [ ] C) 14
- [ ] D) 12
- [ ] E) 13

---

37 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

6 (16) 5

10 (26) 8

12 (?) 4

- [ ] A) 19
- [ ] B) 21
- [ ] C) 48
- [ ] D) 20
- [ ] E) 36

---

38 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

4 (36) 8

10 (39) 3

7 (?) 10

- [ ] A) 60
- [ ] B) 51
- [ ] C) 52
- [ ] D) 18
- [ ] E) 50

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39 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

3 (7) 2

11 (113) 8

4 (?) 2

- [ ] A) 13
- [ ] B) 5
- [ ] C) 14
- [ ] D) 10
- [ ] E) 15

---

40 5 (13) 4

7 (?) 6

- [ ] A) 25
- [ ] B) 19
- [ ] C) 26
- [ ] D) 13
- [ ] E) 21

---

41 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

12 (23) 10

5 (9) 3

7 (?) 10

- [ ] A) 140
- [ ] B) 16
- [ ] C) 18
- [ ] D) 19
- [ ] E) 17

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42 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

2 (21) 7

8 (81) 9

7 (?) 2

- [ ] A) 45
- [ ] B) 17
- [ ] C) 12
- [ ] D) 16
- [ ] E) 15

---

43 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

6 (20) 4

7 (45) 2

10 (?) 8

- [ ] A) 37
- [ ] B) 36
- [ ] C) 22
- [ ] D) 35
- [ ] E) 38

---

44 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

9 (46) 4

10 (80) 7

5 (?) 7

- [ ] A) 46
- [ ] B) 35
- [ ] C) 44
- [ ] D) 40
- [ ] E) 45

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45 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

7 (32) 9
2 (10) 3
3 (?) 8

- [ ] A) 17
- [ ] B) 23
- [ ] C) 27
- [ ] D) 22
- [ ] E) 21

---

46 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

10 (31) 11
8 (23) 7
7 (?) 2

- [ ] A) 23
- [ ] B) 17
- [ ] C) 15
- [ ] D) 5
- [ ] E) 16

---

47 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

2 (33) 11
12 (26) 2
5 (?) 4

- [ ] A) 41
- [ ] B) 24
- [ ] C) 18
- [ ] D) 23
- [ ] E) 25

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48 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

5 (40) 7

10 (50) 4

12 (?) 4

- [ ] A) 15
- [ ] B) 61
- [ ] C) 60
- [ ] D) 59
- [ ] E) 140

---

49 4 (22) 2

5 (?) 3

- [ ] A) 19
- [ ] B) 16
- [ ] C) 18
- [ ] D) 37
- [ ] E) 40

---

50 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

12 (16) 5

5 (13) 9

6 (?) 8

- [ ] A) 13
- [ ] B) 42
- [ ] C) 14
- [ ] D) 12
- [ ] E) 58

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51 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

10 (51) 7

12 (23) 11

6 (?) 2

- [ ] A) 9
- [ ] B) 31
- [ ] C) 33
- [ ] D) 10
- [ ] E) 32

---

52 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

2 (28) 9

4 (50) 10

8 (?) 9

- [ ] A) 55
- [ ] B) 15
- [ ] C) 82
- [ ] D) 83
- [ ] E) 81

---

53 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

7 (12) 4

8 (16) 7

10 (?) 6

- [ ] A) 15
- [ ] B) 26
- [ ] C) 16
- [ ] D) 17
- [ ] E) 18

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54 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

6 (27) 11

12 (26) 4

5 (?) 5

- [ ] A) 19
- [ ] B) 21
- [ ] C) 30
- [ ] D) 9
- [ ] E) 20

---

55 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

11 (46) 12

10 (44) 12

2 (?) 3

- [ ] A) 10
- [ ] B) 11
- [ ] C) 6
- [ ] D) 15
- [ ] E) 9

---

56 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

12 (77) 7

7 (42) 7

8 (?) 6

- [ ] A) 40
- [ ] B) 42
- [ ] C) 43
- [ ] D) 100
- [ ] E) 20

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57 3 (25) 4
5 (?) 6

- [ ] A) 31
- [ ] B) 121
- [ ] C) -11
- [ ] D) 61
- [ ] E) 50

---

58 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.
12 (94) 7
11 (109) 9
7 (?) 9

- [ ] A) 74
- [ ] B) 70
- [ ] C) 73
- [ ] D) 72
- [ ] E) 63

---

59 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.
9 (24) 3
6 (26) 7
3 (?) 7

- [ ] A) 21
- [ ] B) 52
- [ ] C) 24
- [ ] D) 20
- [ ] E) 19

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60 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

12 (80) 8

5 (9) 4

3 (?) 2

- [ ] A) 5
- [ ] B) 6
- [ ] C) 11
- [ ] D) 4
- [ ] E) 9

---

61 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

5 (9) 4

10 (13) 3

4 (?) 3

- [ ] A) 9
- [ ] B) 7
- [ ] C) 6
- [ ] D) 8
- [ ] E) 19

---

62 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

10 (23) 3

8 (19) 3

11 (?) 12

- [ ] A) 142
- [ ] B) 33
- [ ] C) 34
- [ ] D) 21
- [ ] E) 35

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63 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

12 (27) 5
4 (24) 10
10 (?) 6

- [ ] A) 27
- [ ] B) 25
- [ ] C) 76
- [ ] D) 48
- [ ] E) 26

---

64 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

8 (44) 6
11 (132) 11
9 (?) 8

- [ ] A) 74
- [ ] B) 72
- [ ] C) 19
- [ ] D) 73
- [ ] E) 18

---

65 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

12 (27) 5
2 (15) 3
9 (?) 11

- [ ] A) 40
- [ ] B) 29
- [ ] C) 30
- [ ] D) 31
- [ ] E) 109

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66 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

10 (18) 9
9 (12) 4
12 (?) 5

- [ ] A) 16
- [ ] B) 55
- [ ] C) 17
- [ ] D) 60
- [ ] E) 15

---

67 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

4 (60) 12
3 (32) 8
11 (?) 5

- [ ] A) 59
- [ ] B) 71
- [ ] C) 60
- [ ] D) 61
- [ ] E) 126

---

68 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

8 (55) 3
11 (72) 7
10 (?) 9

- [ ] A) 19
- [ ] B) 18
- [ ] C) 57
- [ ] D) 28
- [ ] E) 20

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69 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

9 (22) 2
7 (34) 10
3 (?) 7

- [ ] A) 30
- [ ] B) 21
- [ ] C) 19
- [ ] D) 20
- [ ] E) 18

---

70 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

11 (133) 12
10 (109) 9
6 (?) 8

- [ ] A) 26
- [ ] B) 44
- [ ] C) 43
- [ ] D) 45
- [ ] E) 24

---

71 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

12 (36) 9
10 (40) 6
11 (?) 6

- [ ] A) 56
- [ ] B) 55
- [ ] C) 54
- [ ] D) 85
- [ ] E) 60

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72 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

7 (11) 3

3 (9) 5

11 (?) 3

- [ ] A) 15
- [ ] B) 30
- [ ] C) 14
- [ ] D) 43
- [ ] E) 16

---

73 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

11 (17) 3

12 (20) 4

6 (?) 6

- [ ] A) 13
- [ ] B) 19
- [ ] C) 18
- [ ] D) 30
- [ ] E) 17

---

74 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.

11 (126) 5

4 (22) 6

8 (?) 10

- [ ] A) 75
- [ ] B) 88
- [ ] C) 73
- [ ] D) 74
- [ ] E) 80

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75 4 (25) 6
8 (?) 12

- [ ] A) 104
- [ ] B) 20
- [ ] C) 100
- [ ] D) 10
- [ ] E) 200

---

76 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.
2 (11) 9
4 (14) 10
6 (?) 9

- [ ] A) 21
- [ ] B) 15
- [ ] C) 64
- [ ] D) 14
- [ ] E) 16

---

77 The numbers in the brackets are linked to the numbers outside by the same rule each time. Find the missing number.
6 (40) 5
7 (31) 3
12 (?) 11

- [ ] A) 155
- [ ] B) 35
- [ ] C) 143
- [ ] D) 142
- [ ] E) 141

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Mark scheme · 3.18 Number Connections: 1-hour Pack

Question 1

A) 128 - rule: multiply the sum by the difference; for 12 and 4 this gives 128 **B1**

Answer: A) 128

Question 2

A) 63 - rule: multiply the two numbers then subtract the first; for 9 and 8 this gives 63 **B1**

Answer: A) 63

Question 3

E) 18 - rule: multiply the first by 3 then subtract the second; for 7 and 3 this gives 18 **B1**

Answer: E) 18

Question 4

C) 18 - rule: multiply the first by 3 then subtract the second; for 8 and 6 this gives 18 **B1**

Answer: C) 18

Question 5

D) 65 - rule is (add the numbers, multiply by their difference): (8 + 3) x (8 - 3) = 55, so (9 + 4) x (9 - 4) = 65 **B1**

Answer: 65

Question 6

B) 15 - rule: add the two numbers then subtract 1; for 10 and 6 this gives 15 **B1**

Answer: B) 15

Question 7

D) 17 - rule: multiply the first by 3 then add the second; for 2 and 11 this gives 17 **B1**

Answer: D) 17

Question 8

C) 78 - rule: multiply the two numbers then add the second; for 12 and 6 this gives 78 **B1**

Answer: C) 78

Question 9

A) 48 - rule: multiply the first by 3 then add the second; for 12 and 12 this gives 48 **B1**

Answer: A) 48

Question 10

E) 16 - rule: multiply the two numbers then double; for 2 and 4 this gives 16 **B1**

Answer: E) 16

Question 11

C) 39 - rule: add the two numbers then multiply by 3; for 11 and 2 this gives 39 **B1**

Answer: C) 39

Question 12

D) 22 - rule: multiply then add 10; for 6 and 2 this gives 22 **B1**

Answer: D) 22

Question 13

B) 10 - rule is (multiply the first number by 3, subtract the second): (3 x 4) - 5 = 7, so (3 x 6) - 8 = 10 **B1**

Answer: 10

Question 14

B) 60 - rule: multiply the two numbers then double; for 10 and 3 this gives 60 **B1**

Answer: B) 60

Question 15

B) 6 - rule: multiply the first by 3 then subtract the second; for 3 and 3 this gives 6 **B1**

Answer: B) 6

Question 16

D) 45 - rule: subtract then multiply by the first number; for 9 and 4 this gives 45 **B1**

Answer: D) 45

Question 17

A) 4 - rule: subtract the second outer number from the first; for 11 and 7 this gives 4 **B1**

Answer: A) 4

Question 18

D) 24 - rule: multiply the two numbers then subtract the first; for 6 and 5 this gives 24 **B1**

Answer: D) 24

Question 19

E) 12 - rule: add the two numbers then double; for 2 and 4 this gives 12 **B1**

Answer: E) 12

Question 20

A) 23 - rule: double the second number and add it to the first; for 3 and 10 this gives 23 **B1**

Answer: A) 23

Question 21

C) 56 - rule: subtract the square of the second number from the square of the first; for 9 and 5 this gives 56 **B1**

Answer: C) 56

Question 22

C) 10 - rule is (add the numbers, then subtract their difference): (7 + 3) - (7 - 3) = 6, so (9 + 5) - (9 - 5) = 10 **B1**

Answer: 10

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Question 23

B) 30 - rule: multiply the two numbers then add the first; for 10 and 2 this gives 30 **B1**

Answer: B) 30

Question 24

A) 28 - rule: multiply the two outer numbers; for 7 and 4 this gives 28 **B1**

Answer: A) 28

Question 25

C) 133 - rule: square the first number and subtract the second; for 12 and 11 this gives 133 **B1**

Answer: C) 133

Question 26

D) 10 - rule: add the two numbers then add 1; for 6 and 3 this gives 10 **B1**

Answer: D) 10

Question 27

B) 28 - rule: multiply the two numbers then add the first; for 4 and 6 this gives 28 **B1**

Answer: B) 28

Question 28

E) 27 - rule: double the second number and add it to the first; for 11 and 8 this gives 27 **B1**

Answer: E) 27

Question 29

A) 5 - rule: multiply the two numbers then subtract the first; for 5 and 2 this gives 5 **B1**

Answer: A) 5

Question 30

D) 45 - rule: subtract then multiply by the first number; for 9 and 4 this gives 45 **B1**

Answer: D) 45

Question 31

C) 120 - rule: multiply the two numbers then double; for 6 and 10 this gives 120 **B1**

Answer: C) 120

Question 32

C) 7 - rule: double the first number and subtract the second; for 6 and 5 this gives 7 **B1**

Answer: C) 7

Question 33

D) 43 - rule: square the first number and subtract the second; for 7 and 6 this gives 43 **B1**

Answer: D) 43

Question 34

B) 19 - rule: add the two numbers then add 10; for 2 and 7 this gives 19 **B1**

Answer: B) 19

Question 35

A) 56 - rule: multiply the two numbers then double; for 4 and 7 this gives 56 **B1**

Answer: A) 56

Question 36

E) 13 - rule: subtract the square of the second number from the square of the first; for 7 and 6 this gives 13 **B1**

Answer: E) 13

Question 37

D) 20 - rule: double the second number and add it to the first; for 12 and 4 this gives 20 **B1**

Answer: D) 20

Question 38

B) 51 - rule: add the two numbers then multiply by 3; for 7 and 10 this gives 51 **B1**

Answer: B) 51

Question 39

C) 14 - rule: square the first number and subtract the second; for 4 and 2 this gives 14 **B1**

Answer: C) 14

Question 40

B) 19 - rule is (double the first, add the second, then subtract their difference): (2 x 5 + 4) - (5 - 4) = 13, so (2 x 7 + 6) - (7 - 6) = 19 **B1**

Answer: 19

Question 41

C) 18 - rule: add the two numbers then add 1; for 7 and 10 this gives 18 **B1**

Answer: C) 18

Question 42

D) 16 - rule: multiply the two numbers then add the second; for 7 and 2 this gives 16 **B1**

Answer: D) 16

Question 43

B) 36 - rule: multiply the sum by the difference; for 10 and 8 this gives 36 **B1**

Answer: B) 36

Question 44

E) 45 - rule: multiply then add 10; for 5 and 7 this gives 45 **B1**

Answer: E) 45

Question 45

D) 22 - rule: add the two numbers then double; for 3 and 8 this gives 22 **B1**

Answer: D) 22

Question 46

E) 16 - rule: double the first number and add the second; for 7 and 2 this gives 16 **B1**

Answer: E) 16

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Question 47

B) 24 - rule: multiply the two numbers then add the second; for 5 and 4 this gives 24 **B1**

Answer: B) 24

Question 48

C) 60 - rule: multiply the two numbers then add the first; for 12 and 4 this gives 60 **B1**

Answer: C) 60

Question 49

D) 37 - rule is (add the numbers, multiply by the first, subtract the second): (4 + 2) x 4 - 2 = 22, so (5 + 3) x 5 - 3 = 37 **B1**

Answer: 37

Question 50

A) 13 - rule: add the two numbers then subtract 1; for 6 and 8 this gives 13 **B1**

Answer: A) 13

Question 51

E) 32 - rule: multiply the sum by the difference; for 6 and 2 this gives 32 **B1**

Answer: E) 32

Question 52

C) 82 - rule: multiply then add 10; for 8 and 9 this gives 82 **B1**

Answer: C) 82

Question 53

D) 17 - rule: add the two numbers then add 1; for 10 and 6 this gives 17 **B1**

Answer: D) 17

Question 54

E) 20 - rule: add the two numbers then add 10; for 5 and 5 this gives 20 **B1**

Answer: E) 20

Question 55

A) 10 - rule: add the two numbers then double; for 2 and 3 this gives 10 **B1**

Answer: A) 10

Question 56

B) 42 - rule: multiply the two numbers then subtract the second; for 8 and 6 this gives 42 **B1**

Answer: B) 42

Question 57

D) 61 - rule is (square each number, then add): $3^2 + 4^2 = 25$, so $5^2 + 6^2 = 61$ **B1**

Answer: 61

Question 58

C) 73 - rule: multiply then add 10; for 7 and 9 this gives 73 **B1**

Answer: C) 73

Question 59

D) 20 - rule: add the two numbers then double; for 3 and 7 this gives 20 **B1**

Answer: D) 20

Question 60

A) 5 - rule: multiply the sum by the difference; for 3 and 2 this gives 5 **B1**

Answer: A) 5

Question 61

B) 7 - rule: add the two outer numbers; for 4 and 3 this gives 7 **B1**

Answer: B) 7

Question 62

C) 34 - rule: double the first number and add the second; for 11 and 12 this gives 34 **B1**

Answer: C) 34

Question 63

E) 26 - rule: add the two numbers then add 10; for 10 and 6 this gives 26 **B1**

Answer: E) 26

Question 64

D) 73 - rule: square the second number and add the first; for 9 and 8 this gives 73 **B1**

Answer: D) 73

Question 65

C) 30 - rule: add the two numbers then add 10; for 9 and 11 this gives 30 **B1**

Answer: C) 30

Question 66

A) 16 - rule: add the two numbers then subtract 1; for 12 and 5 this gives 16 **B1**

Answer: A) 16

Question 67

C) 60 - rule: multiply the two numbers then add the second; for 11 and 5 this gives 60 **B1**

Answer: C) 60

Question 68

A) 19 - rule: multiply the sum by the difference; for 10 and 9 this gives 19 **B1**

Answer: A) 19

Question 69

D) 20 - rule: add the two numbers then double; for 3 and 7 this gives 20 **B1**

Answer: D) 20

Question 70

B) 44 - rule: square the first number and add the second; for 6 and 8 this gives 44 **B1**

Answer: B) 44

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Question 71

B) 55 - rule: subtract then multiply by the first number; for 11 and 6 this gives 55 **B1**

Answer: B) 55

Question 72

A) 15 - rule: add the two numbers then add 1; for 11 and 3 this gives 15 **B1**

Answer: A) 15

Question 73

C) 18 - rule: double the second number and add it to the first; for 6 and 6 this gives 18 **B1**

Answer: C) 18

Question 74

D) 74 - rule: square the first number and add the second; for 8 and 10 this gives 74 **B1**

Answer: D) 74

Question 75

C) 100 - rule is (find the mean, then square it): $((4 + 6) / 2)^2 = 25$, so $((8 + 12) / 2)^2 = 100$ **B1**

Answer: 100

Question 76

B) 15 - rule: add the two outer numbers; for 6 and 9 this gives 15 **B1**

Answer: B) 15

Question 77

D) 142 - rule: multiply then add 10; for 12 and 11 this gives 142 **B1**

Answer: D) 142

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