# 3.16 Number Series: 30-minute Pack

GL ASSESSMENT EP.V16 · about 30 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

**Each question shows a series of numbers with a question mark in place of the missing number. Study the numbers already given and work out the rule that links them together: the rule might be a constant amount added or subtracted, a constant multiplier or divisor, a difference that itself increases or decreases, two series woven together term by term, or a rule linking each number to the two numbers before it. Once you have worked out the rule, choose the option, A to E, that continues the series correctly. Only one option is correct in each question, and each wrong option is designed to match a common slip such as using the wrong difference, stopping the pattern too early, or muddling two interleaved series. Study the worked example below before you begin, then work through the questions in order: they start off easier and get harder as you go.**

**Worked example.** 2, 4, 6, 8, 10, ? A) 11 B) 12 C) 13 D) 14 E) 16 **Answer: B) 12.** Each number in the series is 2 more than the number before it (add 2 each time): 2, 4, 6, 8, 10. So the next number after 10 is 10 + 2 = 12, which is option B. Option A (11) adds only 1; option C (13) adds 3; option D (14) adds 4; option E (16) adds 6, doubling the true difference.

**1** Find the next number in this series.
126, 123, 119, 114, 108, 101, 93, ?

- ☐ A) 186
- ☐ B) 85
- ☐ C) 83
- ☐ D) 94
- ☐ E) 84

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**2** Find the next number in this series.
43, 39, 35, 31, 27, ?

- ☐ A) 24
- ☐ B) 27
- ☐ C) 22
- ☐ D) 23
- ☐ E) 21


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**3** Find the next number in this series.

21, 73, 23, 68, 25, 63, 27, 58, ?

- [ ] A) 92
- [ ] B) 29
- [ ] C) 30
- [ ] D) 89
- [ ] E) 28

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**4** Find the next number in this series.

5, 10, 20, 40, 80, ?

- [ ] A) 100
- [ ] B) 120
- [ ] C) 150
- [ ] D) 160
- [ ] E) 320

---

**5** Find the next number in this series.

29, 40, 51, 62, 73, ?

- [ ] A) 73
- [ ] B) 83
- [ ] C) 85
- [ ] D) 48
- [ ] E) 84

---

**6** Find the next number in this series.

13, 18, 27, 40, 57, 78, ?

- [ ] A) 99
- [ ] B) 102
- [ ] C) 103
- [ ] D) 104
- [ ] E) 115


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**7** Find the next number in this series.
4, 5, 8, 13, 20, 29, 40, ?

- ☐ A) 52
- ☐ B) 51
- ☐ C) 35
- ☐ D) 53
- ☐ E) 54

---

**8** Find the next number in this series.
25, 50, 75, 100, 125, 150, ?

- ☐ A) 185
- ☐ B) 174
- ☐ C) 173
- ☐ D) 176
- ☐ E) 175

---

**9** Find the next number in this series.
36, 41, 50, 63, 80, 101, 126, ?

- ☐ A) 155
- ☐ B) 154
- ☐ C) 156
- ☐ D) 151
- ☐ E) 551

---

**10** Find the next number in this series.
23, 21, 19, 17, 15, 13, ?

- ☐ A) 26
- ☐ B) 11
- ☐ C) 21
- ☐ D) 10
- ☐ E) 12


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**11** Find the next number in this series.

229, 223, 213, 199, 181, 159, ?

- [ ] A) 143
- [ ] B) 134
- [ ] C) 133
- [ ] D) 137
- [ ] E) 132

---

**12** Find the next number in this series.

11, 57, 14, 61, 17, 65, 20, 69, ?

- [ ] A) 21
- [ ] B) 23
- [ ] C) 22
- [ ] D) 118
- [ ] E) 24

---

**13** Find the next number in this series.

243, 81, 27, 9, ?

- [ ] A) 3
- [ ] B) 4
- [ ] C) 5
- [ ] D) 6
- [ ] E) 7

---

**14** Find the next number in this series.

50, 55, 60, 65, 70, ?

- [ ] A) 77
- [ ] B) 57
- [ ] C) 76
- [ ] D) 75
- [ ] E) 74


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**15** Find the next number in this series.
11, 13, 18, 26, 37, 51, 68, ?

- ☐ A) 87
- ☐ B) 85
- ☐ C) 89
- ☐ D) 98
- ☐ E) 88

---

**16** Find the next number in this series.
36, 42, 52, 66, 84, 106, ?

- ☐ A) 131
- ☐ B) 212
- ☐ C) 132
- ☐ D) 128
- ☐ E) 133

---

**17** Find the next number in this series.
51, 48, 45, 42, 39, 36, ?

- ☐ A) 33
- ☐ B) 32
- ☐ C) 36
- ☐ D) 34
- ☐ E) 72

---

**18** Find the next number in this series.
230, 225, 217, 206, 192, 175, 155, ?

- ☐ A) 133
- ☐ B) 131
- ☐ C) 135
- ☐ D) 132
- ☐ E) 130


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**19** Find the next number in this series.

52, 57, 62, 67, 72, ?

- [ ] A) 78
- [ ] B) 72
- [ ] C) 144
- [ ] D) 76
- [ ] E) 77

---

**20** Find the next number in this series.

49, 60, 71, 82, 93, ?

- [ ] A) 104
- [ ] B) 103
- [ ] C) 105
- [ ] D) 114
- [ ] E) 401

---

**21** Find the next number in this series.

2, 88, 4, 93, 6, 98, 8, 103, ?

- [ ] A) 198
- [ ] B) 9
- [ ] C) 11
- [ ] D) 10
- [ ] E) 103

---

**22** Find the next number in this series.

1, 1, 2, 3, 5, 8, ?

- [ ] A) 9
- [ ] B) 10
- [ ] C) 11
- [ ] D) 12
- [ ] E) 13


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**23** Find the next number in this series.
11, 14, 21, 32, 47, 66, 89, ?

- [ ] A) 129
- [ ] B) 112
- [ ] C) 116
- [ ] D) 115
- [ ] E) 117

---

**24** Find the next number in this series.
40, 51, 62, 73, 84, 95, ?

- [ ] A) 105
- [ ] B) 106
- [ ] C) 107
- [ ] D) 111
- [ ] E) 104

---

**25** Find the next number in this series.
3, 6, 11, 18, 27, 38, ?

- [ ] A) 49
- [ ] B) 76
- [ ] C) 52
- [ ] D) 50
- [ ] E) 51

---

**26** Find the next number in this series.
45, 70, 95, 120, 145, 170, ?

- [ ] A) 194
- [ ] B) 195
- [ ] C) 196
- [ ] D) 170
- [ ] E) 207


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**27** Find the next number in this series.
16, 25, 34, 43, 52, 61, ?

- [ ] A) 74
- [ ] B) 7
- [ ] C) 71
- [ ] D) 70
- [ ] E) 69

---

**28** Find the next number in this series.
36, 43, 50, 57, 64, 71, ?

- [ ] A) 78
- [ ] B) 87
- [ ] C) 77
- [ ] D) 79
- [ ] E) 76

---

**29** Find the next number in this series.
5, 8, 13, 21, 34, 55, 89, ?

- [ ] A) 144
- [ ] B) 143
- [ ] C) 145
- [ ] D) 171
- [ ] E) 123

---

**30** Find the next number in this series.
24, 35, 46, 57, 68, 79, ?

- [ ] A) 95
- [ ] B) 90
- [ ] C) 91
- [ ] D) 100
- [ ] E) 89


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**31** Find the next number in this series.

10, 13, 11, 14, 12, 15, ?

- ☐ A) 12
- ☐ B) 13
- ☐ C) 16
- ☐ D) 17
- ☐ E) 18

---

**32** Find the next number in this series.

22, 24, 26, 28, 30, 32, ?

- ☐ A) 33
- ☐ B) 32
- ☐ C) 35
- ☐ D) 43
- ☐ E) 34

---

**33** Find the next number in this series.

174, 171, 165, 156, 144, 129, ?

- ☐ A) 112
- ☐ B) 114
- ☐ C) 111
- ☐ D) 110
- ☐ E) 129

---

**34** Find the next number in this series.

5, 12, 19, 26, 33, ?

- ☐ A) 40
- ☐ B) 41
- ☐ C) 4
- ☐ D) 39
- ☐ E) 33


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**35** Find the next number in this series.
18, 30, 42, 54, 66, ?

- ☐ A) 77
- ☐ B) 79
- ☐ C) 78
- ☐ D) 132
- ☐ E) 84

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**36** Find the next number in this series.
7, 13, 20, 28, 37, 47, 58, ?

- ☐ A) 76
- ☐ B) 70
- ☐ C) 80
- ☐ D) 69
- ☐ E) 71

---

**37** Find the next number in this series.
25, 36, 47, 58, 69, 80, ?

- ☐ A) 80
- ☐ B) 90
- ☐ C) 92
- ☐ D) 91
- ☐ E) 19


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**38** Find the next number in this series.

10, 13, 16, 19, 22, 25, ?

- ☐ A) 27
- ☐ B) 82
- ☐ C) 38
- ☐ D) 29
- ☐ E) 28

---

**39** Find the next number in this series.

9, 80, 11, 75, 13, 70, 15, 65, ?

- ☐ A) 16
- ☐ B) 18
- ☐ C) 17
- ☐ D) 15
- ☐ E) 115


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# Mark scheme · 3.16 Number Series: 30-minute Pack

## Question 1

E) 84 - the amount subtracted changes by 1 each time (3, 4, 5, 6, 7, 8, 9): 126, 123, 119, 114, 108, 101, 93, 84 **B1**

**Answer: E) 84**

## Question 2

D) 23 - each term decreases by 4: 43, 39, 35, 31, 27, 23 **B1**

**Answer: D) 23**

## Question 3

B) 29 - two series are woven together: the odd terms change by +2 and the even terms change by -5: 21, 73, 23, 68, 25, 63, 27, 58, 29 **B1**

**Answer: B) 29**

## Question 4

D) 160 - each term doubles the one before it (5, 10, 20, 40, 80, 160) **B1**

**Answer: D) 160**

## Question 5

E) 84 - each term increases by 11: 29, 40, 51, 62, 73, 84 **B1**

**Answer: E) 84**

## Question 6

C) 103 - the amount added changes by 4 each time (5, 9, 13, 17, 21, 25): 13, 18, 27, 40, 57, 78, 103 **B1**

**Answer: C) 103**

## Question 7

D) 53 - the amount added changes by 2 each time (1, 3, 5, 7, 9, 11, 13): 4, 5, 8, 13, 20, 29, 40, 53 **B1**

**Answer: D) 53**

## Question 8

E) 175 - each term increases by 25: 25, 50, 75, 100, 125, 150, 175 **B1**

**Answer: E) 175**

## Question 9

A) 155 - the amount added changes by 4 each time (5, 9, 13, 17, 21, 25, 29): 36, 41, 50, 63, 80, 101, 126, 155 **B1**

**Answer: A) 155**

## Question 10

B) 11 - each term decreases by 2: 23, 21, 19, 17, 15, 13, 11 **B1**

**Answer: B) 11**

## Question 11

C) 133 - the amount subtracted changes by 4 each time (6, 10, 14, 18, 22, 26): 229, 223, 213, 199, 181, 159, 133 **B1**

**Answer: C) 133**

## Question 12

B) 23 - two series are woven together: the odd terms change by +3 and the even terms change by +4: 11, 57, 14, 61, 17, 65, 20, 69, 23 **B1**

**Answer: B) 23**

## Question 13

A) 3 - each term is divided by 3 (243, 81, 27, 9, 3) **B1**

**Answer: A) 3**

## Question 14

D) 75 - each term increases by 5: 50, 55, 60, 65, 70, 75 **B1**

**Answer: D) 75**

## Question 15

E) 88 - the amount added changes by 3 each time (2, 5, 8, 11, 14, 17, 20): 11, 13, 18, 26, 37, 51, 68, 88 **B1**

**Answer: E) 88**

## Question 16

C) 132 - the amount added changes by 4 each time (6, 10, 14, 18, 22, 26): 36, 42, 52, 66, 84, 106, 132 **B1**

**Answer: C) 132**

## Question 17

A) 33 - each term decreases by 3: 51, 48, 45, 42, 39, 36, 33 **B1**

**Answer: A) 33**

## Question 18

D) 132 - the amount subtracted changes by 3 each time (5, 8, 11, 14, 17, 20, 23): 230, 225, 217, 206, 192, 175, 155, 132 **B1**

**Answer: D) 132**

## Question 19

E) 77 - each term increases by 5: 52, 57, 62, 67, 72, 77 **B1**

**Answer: E) 77**

## Question 20

A) 104 - each term increases by 11: 49, 60, 71, 82, 93, 104 **B1**

**Answer: A) 104**

## Question 21

D) 10 - two series are woven together: the odd terms change by +2 and the even terms change by +5: 2, 88, 4, 93, 6, 98, 8, 103, 10 **B1**

**Answer: D) 10**

## Question 22

E) 13 - each term is the sum of the two before it (1, 1, 2, 3, 5, 8, 13) **B1**

**Answer: E) 13**

## Question 23

C) 116 - the amount added changes by 4 each time (3, 7, 11, 15, 19, 23, 27): 11, 14, 21, 32, 47, 66, 89, 116 **B1**

**Answer: C) 116**


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## Question 24

B) 106 - each term increases by 11: 40, 51, 62, 73, 84, 95, 106 **B1**

**Answer: B) 106**

## Question 25

E) 51 - the terms are square numbers +2: 3, 6, 11, 18, 27, 38, 51 **B1**

**Answer: E) 51**

## Question 26

B) 195 - each term increases by 25: 45, 70, 95, 120, 145, 170, 195 **B1**

**Answer: B) 195**

## Question 27

D) 70 - each term increases by 9: 16, 25, 34, 43, 52, 61, 70 **B1**

**Answer: D) 70**

## Question 28

A) 78 - each term increases by 7: 36, 43, 50, 57, 64, 71, 78 **B1**

**Answer: A) 78**

## Question 29

A) 144 - each term is the sum of the two terms before it: 5, 8, 13, 21, 34, 55, 89, 144 **B1**

**Answer: A) 144**

## Question 30

B) 90 - each term increases by 11: 24, 35, 46, 57, 68, 79, 90 **B1**

**Answer: B) 90**

## Question 31

B) 13 - the pattern alternates +3 then -2 (10, 13, 11, 14, 12, 15, 13), so 15-2=13 **B1**

**Answer: B) 13**

## Question 32

E) 34 - each term increases by 2: 22, 24, 26, 28, 30, 32, 34 **B1**

**Answer: E) 34**

## Question 33

C) 111 - the amount subtracted changes by 3 each time (3, 6, 9, 12, 15, 18): 174, 171, 165, 156, 144, 129, 111 **B1**

**Answer: C) 111**

## Question 34

A) 40 - each term increases by 7: 5, 12, 19, 26, 33, 40 **B1**

**Answer: A) 40**

## Question 35

C) 78 - each term increases by 12: 18, 30, 42, 54, 66, 78 **B1**

**Answer: C) 78**

## Question 36

B) 70 - the amount added changes by 1 each time (6, 7, 8, 9, 10, 11, 12): 7, 13, 20, 28, 37, 47, 58, 70 **B1**

**Answer: B) 70**

## Question 37

D) 91 - each term increases by 11: 25, 36, 47, 58, 69, 80, 91 **B1**

**Answer: D) 91**

## Question 38

E) 28 - each term increases by 3: 10, 13, 16, 19, 22, 25, 28 **B1**

**Answer: E) 28**

## Question 39

C) 17 - two series are woven together: the odd terms change by +2 and the even terms change by -5: 9, 80, 11, 75, 13, 70, 15, 65, 17 **B1**

**Answer: C) 17**


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