3.16 Number Series: 10-minute Pack

GL ASSESSMENT EP.V16 · about 10 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.

41, 44, 50, 59, 71, 86, ?

- ☐ A) 101
- ☐ B) 104
- ☐ C) 105
- ☐ D) 86
- ☐ E) 103

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2 Find the next number in this series.

41, 38, 35, 32, 29, 26, ?

- ☐ A) 21
- ☐ B) 24
- ☐ C) 52
- ☐ D) 23
- ☐ E) 22

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3 Find the next number in this series.
111, 109, 105, 99, 91, 81, ?

- ☐ A) 96
- ☐ B) 68
- ☐ C) 69
- ☐ D) 70
- ☐ E) 71

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4 Find the next number in this series.
44, 51, 58, 65, 72, ?

- ☐ A) 78
- ☐ B) 144
- ☐ C) 80
- ☐ D) 79
- ☐ E) 82

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5 Find the next number in this series.
154, 148, 139, 127, 112, 94, ?

- ☐ A) 76
- ☐ B) 73
- ☐ C) 83
- ☐ D) 72
- ☐ E) 74

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6 Find the next number in this series.
2, 14, 26, 38, 50, ?

- ☐ A) 62
- ☐ B) 63
- ☐ C) 26
- ☐ D) 72
- ☐ E) 61

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7 Find the next number in this series.

44, 48, 53, 59, 66, 74, ?

- ☐ A) 84
- ☐ B) 83
- ☐ C) 82
- ☐ D) 93
- ☐ E) 81

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8 Find the next number in this series.

12, 13, 17, 24, 34, 47, ?

- ☐ A) 63
- ☐ B) 64
- ☐ C) 61
- ☐ D) 62
- ☐ E) 60

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9 Find the next number in this series.

100, 90, 81, 73, 66, ?

- ☐ A) 58
- ☐ B) 59
- ☐ C) 60
- ☐ D) 61
- ☐ E) 64

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10 Find the next number in this series.

6, 7, 12, 21, 34, 51, 72, ?

- ☐ A) 96
- ☐ B) 144
- ☐ C) 97
- ☐ D) 93
- ☐ E) 98

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11 Find the next number in this series.
26, 70, 28, 66, 30, 62, 32, 58, ?

- [ ] A) 84
- [ ] B) 34
- [ ] C) 35
- [ ] D) 43
- [ ] E) 33

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12 Find the next number in this series.
48, 60, 72, 84, 96, ?

- [ ] A) 108
- [ ] B) 109
- [ ] C) 107
- [ ] D) 801
- [ ] E) 114

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13 Find the next number in this series.
14, 59, 17, 63, 20, 67, 23, 71, ?

- [ ] A) 24
- [ ] B) 25
- [ ] C) 27
- [ ] D) 26
- [ ] E) 119

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Mark scheme · 3.16 Number Series: 10-minute Pack

Question 1

B) 104 - the amount added changes by 3 each time (3, 6, 9, 12, 15, 18): 41, 44, 50, 59, 71, 86, 104 **B1**

Answer: B) 104

Question 2

D) 23 - each term decreases by 3: 41, 38, 35, 32, 29, 26, 23 **B1**

Answer: D) 23

Question 3

C) 69 - the amount subtracted changes by 2 each time (2, 4, 6, 8, 10, 12): 111, 109, 105, 99, 91, 81, 69 **B1**

Answer: C) 69

Question 4

D) 79 - each term increases by 7: 44, 51, 58, 65, 72, 79 **B1**

Answer: D) 79

Question 5

B) 73 - the amount subtracted changes by 3 each time (6, 9, 12, 15, 18, 21): 154, 148, 139, 127, 112, 94, 73 **B1**

Answer: B) 73

Question 6

A) 62 - each term increases by 12: 2, 14, 26, 38, 50, 62 **B1**

Answer: A) 62

Question 7

B) 83 - the amount added changes by 1 each time (4, 5, 6, 7, 8, 9): 44, 48, 53, 59, 66, 74, 83 **B1**

Answer: B) 83

Question 8

A) 63 - the amount added changes by 3 each time (1, 4, 7, 10, 13, 16): 12, 13, 17, 24, 34, 47, 63 **B1**

Answer: A) 63

Question 9

C) 60 - the amount subtracted decreases by 1 each time (10, 9, 8, 7, 6), so 66-6=60 **B1**

Answer: C) 60

Question 10

C) 97 - the amount added changes by 4 each time (1, 5, 9, 13, 17, 21, 25): 6, 7, 12, 21, 34, 51, 72, 97 **B1**

Answer: C) 97

Question 11

B) 34 - two series are woven together: the odd terms change by +2 and the even terms change by -4: 26, 70, 28, 66, 30, 62, 32, 58, 34 **B1**

Answer: B) 34

Question 12

A) 108 - each term increases by 12: 48, 60, 72, 84, 96, 108 **B1**

Answer: A) 108

Question 13

D) 26 - two series are woven together: the odd terms change by +3 and the even terms change by +4: 14, 59, 17, 63, 20, 67, 23, 71, 26 **B1**

Answer: D) 26

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