



Sequences and Series

1 What would the sum be for this set of integers?

$$4 + 5 + \dots + 10 + 11$$

A 56	B 72	C 49
D 60	E 63	

2 What is the sum of the integers of this summation form?

$$\sum_{n=8}^{18} n$$

A 143	B 150	C 125
D 135	E 162	

3 What would the described sum be?

The sum of all integers from 23 to 35, inclusive

A 413	B 354	C 377
D 399	E 342	

4 Choose the first values that this equation would create starting with $n=1$

$$a_n = 2 \times 2^{n-1}$$

A 2, 4, 6, 8, 10, 12	B 2, 8, 32, 128, 512, 2,048
C 2, 4, 8, 16, 32, 64	D 2, 10, 50, 250, 1,250, 6,250
E 1, 2, 4, 8, 16, 32	F 2, 4, 6, 10, 16, 26

5 Choose the first values that this pattern rule would create

Start at 1 and multiply by 3 for each term

A 1, 3, 9, 27, 81, 243	B 1, 7, 49, 343, 2,401, 16,807
C 1, 0, 0, 0, 0, 0	D 3, 9, 27, 81, 243, 729
E 1, 4, 7, 10, 13, 16	F 1, 4, 5, 9, 14, 23

6 What is the term in this number sequence when $r = 1$

$$5^r$$

A 10	B 15
C 5	D 1

7 Find the term for $n=8$ in this increasing pattern (first term is $n=1$)

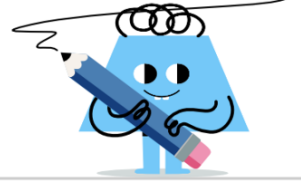
$$3, 6, 9, 12, 15$$

A 29	B -4	C 26
D 23	E 24	F 20

8 Find the term for $n=13$ in this decreasing pattern (first term is $n=1$)

$$32, 30, 28, 26, 24$$

A 131,072	B 8
C 10	D -28
E 7	F 32



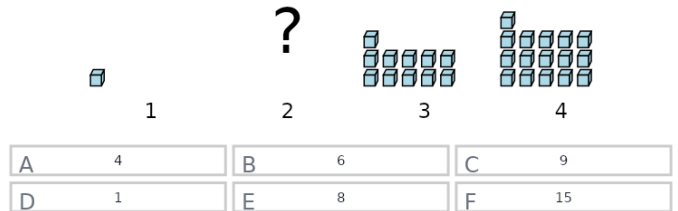
Sequences and Series

- 9** What sequence, starting with $y = 1$, are these the first 3 terms of?

1, -2, -5

A	$4 - 0y$	B	$4 - 1y$
C	$5 - 3y$	D	$4 - 3y$
E	$4 - 4y$	F	$6 - 3y$

- 10** Find the term that would complete this increasing pattern in the missing space
1, ?, 11, 16



- 11** Find the term that would complete this increasing pattern in the missing space

?, 6, 9, 12

A	3	B	7	C	4
D	5	E	9	F	-2

- 12** Find the term that would complete this decreasing pattern in the missing space

?, 21, 16, 11, 6

A	27	B	21	C	25
D	24	E	23	F	26

- 13** Find the correct equation to describe this increasing pattern where $n=1$ is the first term

3, 6, 9, 12, 15

A	$a_n = 6 + 3(n - 1)$	B	$a_n = 1 + 3(n - 1)$
C	$a_n = 3 - 3(n - 1)$	D	$a_n = 3 + 0(n - 1)$
E	$a_n = 3 + 3(n - 1)$	F	$a_n = 3 + 3(n)$

- 14** Find the rule that describes this pattern equation

$$a_n = 11 - 2(n - 1)$$

A Start at 11 and subtract 5 for each term	B Start at 11 and subtract 3 for each term
C Start at 8 and subtract 2 for each term	D Start at 7 and subtract 2 for each term
E Start at 11 and add 2 for each term	F Start at 11 and subtract 2 for each term

- 15** Choose the rule that describes this geometric pattern

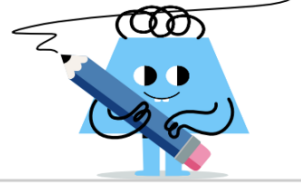
2, 10, 50, 250

A Start at 2 and multiply by 5 for each term	B Start at 2 and subtract 5 for each term
C Start at 2 and multiply by 4 for each term	D Start at 2 and add 5 for each term
E Start at 3 and multiply by 5 for each term	F Start at 6 and multiply by 5 for each term

- 16** What sequence, starting with $m = 1$, are these the first 3 terms of?

2, 4, 8

A	3^m	B	-1^m
C	2^m	D	0^m
E	1^m	F	4^m



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17 Find the term for $n=9$ in this increasing pattern (first term is $n=1$)

3, 5, 7, 9, 11

A 14	B 24	C 21
D 16	E -13	F 19

18 What pattern type do these numbers form?

16, 25, 36, 49

A Quadratic
B Increasing (Arithmetic)

19 Which rule would create this pattern?

9, 16, 25, 36

A Start at 23 and subtract 1 for each term
B Start with 3×3 . The next term is 4×4 , and so on.

20 Find the correct equation to describe this geometric pattern where $n=1$ is the first term

2, 4, 8, 16, 32, 64

A $a_n = 6 \times 2^{n-1}$	B $a_n = 2 \times 2^{n-1}$
C $a_n = 2 \times 3^{n-1}$	D $a_n = 1 \times 2^{n-1}$
E $a_n = 2 \times -2^{n-1}$	F $a_n = 5 \times 2^{n-1}$

21 Find the correct equation that this pattern rule describes

Start at 3 and multiply by 4 for each term

A $a_n = 3 \times 5^{n-1}$	B $a_n = 3 \times 3^{n-1}$
C $a_n = 3 \times 4^n$	D $a_n = 3 \times 2^{n-1}$
E $a_n = 3 \times 4^{n-1}$	F $a_n = 0 \times 4^{n-1}$

22 Find the correct equation to describe this decreasing pattern where $n=1$ is the first term

21, 16, 11, 6

A $a_n = 21 + 5(n-1)$	B $a_n = 21 - 8(n-1)$
C $a_n = 21 - 5(n)$	D $a_n = 21 - 7(n-1)$
E $a_n = 21 - 4(n-1)$	F $a_n = 21 - 5(n-1)$

23 Find the correct equation that this pattern rule describes

Start at 27 and subtract 6 for each term

A $a_n = 27 + 6(n-1)$	B $a_n = 29 - 6(n-1)$
C $a_n = 31 - 6(n-1)$	D $a_n = 23 - 6(n-1)$
E $a_n = 27 \times 6^{n-1}$	F $a_n = 27 - 6(n-1)$

24 Find the correct equation that this pattern rule describes

Start at 3 and add 3 for each term

A $a_n = 0 + 3(n-1)$	B $a_n = 3 + 3(n)$
C $a_n = a_{n-2} + a_{n-1}$	D $a_n = 3 + 2(n-1)$
E $a_n = 5 + 3(n-1)$	F $a_n = 3 + 3(n-1)$