THIRD SPACE LEARNING

Explicit Formula Worksheet

Algebra

Grades 9 to 12

Questions

Name: .....

Date: .....

1 Find the explicit formula for the geometric sequence, -3, 6, -12, 24, ... using, $a_n = a_1(r)^{n-1}$

Answer

2 Find the explicit formula for the geometric sequence, 4, 2, 1, $\frac{1}{2}$... using, $a_n = a_1(r)^{n-1}$

Answer

3 Find the explicit formula for the geometric sequence, 9,-3, $\frac{1}{3}$, - $\frac{1}{9}$ ... using, $a_n = a_1(r)^{n-1}$

Answer

4 Find the explicit formula for the arithmetic sequence, 8, 6, 4, 2.....using the formula $a_n = a_1 + d(n-1)$

Answer

5 Write the explicit formula for the increasing arithmetic sequence 14, 20, 26, 32,....

Answer

6 Find the explicit formula for the decreasing arithmetic sequence 12, 7, 2, −3,....

Answer

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7 A sequence is defined by the explicit formula $a_n = 10 + 5(n - 1)$.
Find the next four terms of the sequence.

Answer

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8 The sequence 10, 15, 20, 25,... is arithmetic. Find the explicit formula.

Answer

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9 Find the explicit formula for the decreasing arithmetic sequence 20, 15, 10, 5

Answer

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10 A sequence is defined by the explicit formula $a_n = 2 \times 3^{n-1}$.
Find the next four terms of the sequence.

Answer

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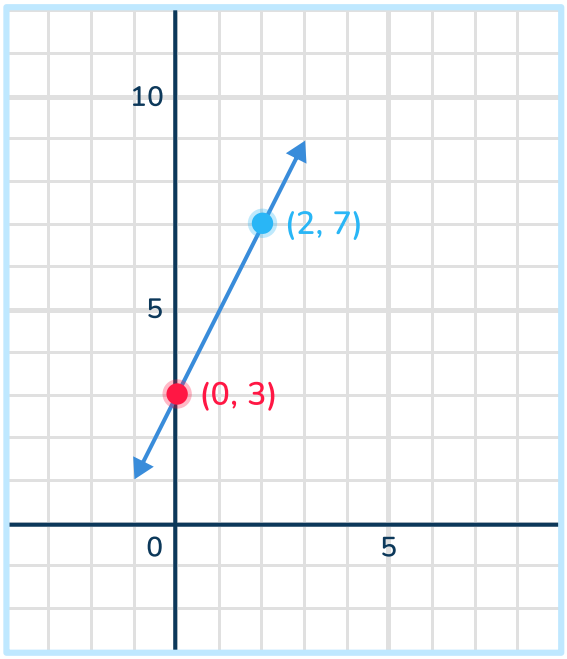
11 The sequence 8, 12, 16, 20,... is arithmetic. Write the explicit formula.

Answer

12 A graph shows a line passing through points (0,3) and (2,7). Write the explicit formula for the linear function represented.



Answer

13 Given the recursive formula $a_n = a_{n-1} + 5$, where $a_1 = 7$, write the explicit formula.

Answer

14 Given the input-output pairs (1,4), (2,8), (3,12), (4,16), write the explicit formula for the linear function.

Answer

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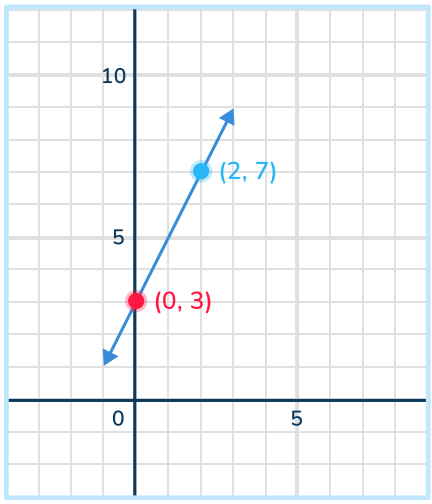
15 A table shows the values $n = 1, 2, 3, 4$ and corresponding outputs 5, 10, 20, 40. Write the explicit formula for this geometric sequence.

Answer

Answers

Question number	Question	Answers	Standard
1	Find the explicit formula for the geometric sequence, -3, 6, -12, 24, ... using, $a_n = a_1(r)^{n-1}$	$a_n = (-3)(-2)^{n-1}$	HSF.BF.A.2
2	Find the explicit formula for the geometric sequence, 4, 2, 1, $\frac{1}{2}$... using, $a_n = a_1(r)^{n-1}$	$a_n = (4)(\frac{1}{2})^{n-1}$	HSF.BF.A.2
3	Find the explicit formula for the geometric sequence, 9,-3,$\frac{1}{3}$, -$\frac{1}{9}$ ... using, $a_n = a_1(r)^{n-1}$	$a_n = (9)(-\frac{1}{3})^{n-1}$	HSF.BF.A.2
4	Find the explicit formula for the arithmetic sequence, 8, 6, 4, 2..... using the formula $a_n = a_1 + d(n-1)$	$a_n = 8 + 2(n-1)$	HSF.BF.A.2
5	Write the explicit formula for the increasing arithmetic sequence 14, 20, 26, 32,....	$a_n = 14 + 6(n-1)$	HSF.BF.A.2
6	Find the explicit formula for the decreasing arithmetic sequence 12, 7, 2, –3,....	$a_n = 12 - 5(n-1)$	HSF.BF.A.2
7	A sequence is defined by the explicit formula $a_n = 10 + 5(n-1)$. Find the next four terms of the sequence.	5, 8, 11, 14, 17	HSF.BF.A.2
8	The sequence 10, 15, 20, 25,... is arithmetic. Find the explicit formula.	$a_n = 10 - 5(n-1)$	HSF.BF.A.2
9	Find the explicit formula for the decreasing arithmetic sequence 20, 15, 10, 5, ...	$a_n = 20 - 5(n-1)$	HSF.BF.A.2

Explicit Formula Worksheet | Grades 9 to 12 | Answers

Question number	Question	Answers	Standard
10	A sequence is defined by the explicit formula $a_n = 2 \times 3^{n-1}$. Find the next four terms of the sequence.	2, 6, 18 54, 162	HSF.BF.A.2
11	The sequence 8, 12, 16, 20,... is arithmetic. Write the explicit formula.	$a_n = 8 + 4(n-1)$	HSF.LE.A.2 HSF.BF.A.2
12	A graph shows a line passing through points (0,3) and (2,7). Write the explicit formula for the linear function represented. 	$f(x) = 2x + 3$	HSF.LE.A.2
13	Given the recursive formula $a_n = a_{n-1} + 5$, where $a_1 = 7$, write the explicit formula.	$a_n = 7 + 5(n-1)$	HSF.LE.A.2 HSF.BF.A.2
14	Given the input-output pairs (1,4), (2,8), (3,12), (4,16), write the explicit formula for the linear function.	$f(n) = 4n$	HSF.LE.A.2 HSF.BF.A.1
15	A table shows the values n= 1, 2, 3, 4 and corresponding outputs 5, 10, 20, 40. Write the explicit formula for this geometric sequence.	$a_n = 5 \times 2^{n-1}$	HSF.LE.A.2 HSF.BF.A.2

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