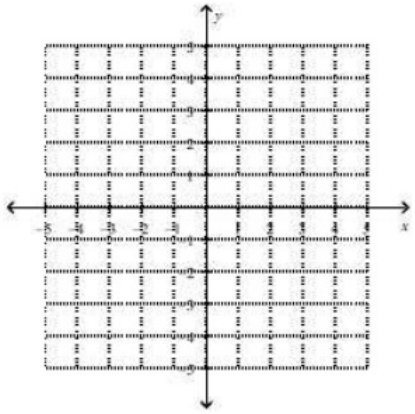
Linear Modeling/Regression

FUNCTION NOTATION

Given the function notation of a coordinate:

a) Rewrite the coordinate as (x, y) b) Plot the point on the graph and give the quadrant it lies in

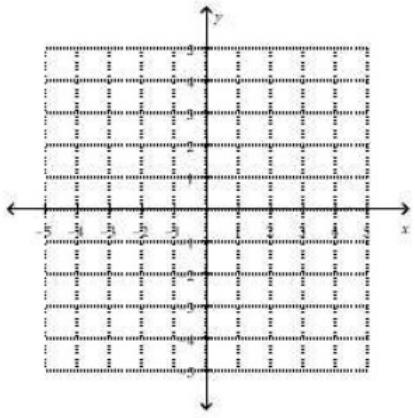
1) f(3) = 4 2) f(-2) = 3 3) f(-4) = -2 4) f(5) = -1



Given the function find the following coordinates and then graph the function

1. f(x) = -2x + 4

a) f(3) = 4 b) f(-2) = c) f(-4) = d) f(5) =



Given the function and the functions value find the following coordinates and then graph the function

1. $f(x) = -2x + 4$

a) $f(x) = 4$

b) $f(x) = -10$

c) $f(x) = -6$

d) $f(x) = 5$

Find the function/explicit rule from the table given below.

x	0	1	2	3	4
f(x)	9	12	15	18	21

Find the recursive rule from the table given below.

n	0	1	2	3	4
a_n	9	12	15	18	21

Find the function/explicit rule from the table given below.

x	0	1	2	3	4
f(x)	5	3	1	-1	-3

Find the recursive rule from the table given below.

n	0	1	2	3	4
a_n	5	3	1	-1	-3

Find the function/explicit rule from the table given below.

x	1	2	3	4	5
f(x)	20	15	10	5	0

Find the recursive rule from the table given below.

n	1	2	3	4	5
a_n	20	15	10	5	0

Find the function/explicit rule from the table given below.

x	1	2	3	4	5
f(x)	10	12	14	16	18

Find the function/explicit rule from the table given below.

n	1	2	3	4	5
a_n	10	12	14	16	18

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Given the function rule, make a table for the values of x = 0,1,2,3,4

A) $f(x) = -4x + 10$ (y-int, slope)

y-int →

x	y
0	10
1	6
2	2
3	-2
4	-6

B) $f(x) = 5x - 50$

x	y
0	-50
1	-45
2	-40
3	-35
4	-30

Given the recursive rule, find the first 5 terms of the sequence

A) $a_n = a_{n-1} + 3$ $a_0 = 5$ (start)

n	0	1	2	3	4
a_n	5	8	11	14	17

B) $a_{n+1} = a_n - 2$ $a_1 = 10$

n	0	1	2	3	4
a_n	12	10	8	6	4

C) $a_n = a_{n-1} + 10$ $a_0 = 10$

10, 20, 30, 40, 50

D) $a_{n+1} = a_n - 5$ $a_1 = 10$

15, 10, 5, 0, -5

n=0 n=1

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Find the missing terms for each arithmetic sequence and state the constant difference.

1. 5, 11, 17, 23, 29, 35...

Constant Difference = 6

$a_n = a_{n-1} + 6 \quad a_0 = 5$

2. 7, 3, -1, -5, -9, -13...

Constant Difference = -4

$a_n = a_{n-1} - 4$

$a_0 = 7$

3. 8, 21, 34, 47, 60...

Constant Difference = 13

$a_n = a_{n-1} + 13 \quad a_0 = 8$

4. 0, $\frac{2}{3}$, $\frac{4}{3}$, 2, $\frac{8}{3}$...

Constant Difference = $\frac{2}{3}$

$a_n = a_{n-1} + \frac{2}{3}$

$a_0 = 0$

5. 5, 10, 15, 20, 25...

Constant Difference = 5

$a_n = a_{n-1} + 5$

$a_0 = 5$

6. 3, -1, -5, -9, -13 ...

Constant Difference = -4

$a_n = a_{n-1} - 4$

$a_0 = 3$

$-13 - 3 = -16$

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Two consecutive terms in an arithmetic sequence are given. Find the constant difference and the recursive equation.

7. If $f(3) = 5$ *and* $f(4) = 8$. ...

$f(5) =$ _____. $f(6) =$ _____. Recursive Function: _____

8. If $f(2) = 20$ *and* $f(3) = 12$.

$f(4) =$ _____. $f(5) =$ _____. Recursive Function: _____

9. If $f(5) = 3.7$ *and* $f(6) = 8.7$.

$f(7) =$ _____. $f(8) =$ _____. Recursive Function: _____