

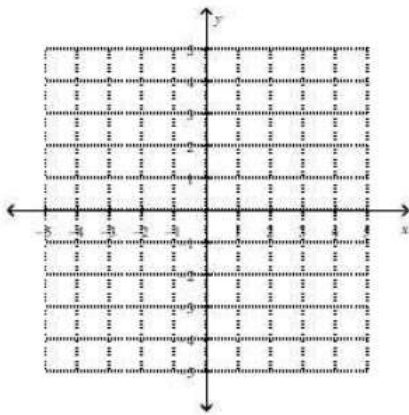
Linear Modeling/Regression

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

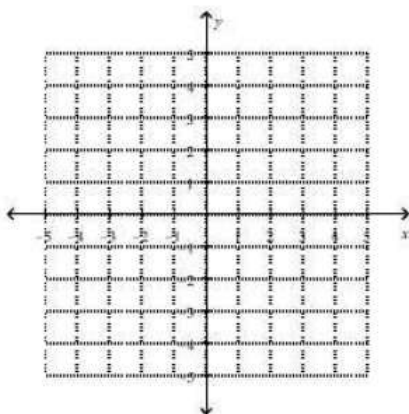
- 1) $f(3) = 4$ 2) $f(-2) = 3$ 3) $f(-4) = -2$ 4) $f(5) = -1$



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) $f(x) = 5$

Arithmetic Sequences: Function and Recursive Rules

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

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

A) $f(x) = -4x + 10$

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

Annotations:
 - y -int points to the y column header
 - y -int points to the value 10 in the y column
 - slope points to the coefficient -4 in the equation
 - y -int points to the value 10 in the y column

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

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) $a_n = a_{n-1} + 3$
 start \downarrow
 $a_0 = 5$

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

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

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

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

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

10, 20, 30, 40, 50

$\frac{15}{n=0}, \frac{10}{n=1}, \frac{5}{n=2}, \frac{0}{n=3}, \frac{-5}{n=4}$

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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

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

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

Constant Difference = 13

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

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

Constant Difference = 5

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

$a_0 = 5$

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

Constant Difference = -4

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

$a_0 = 7$

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

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

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

$a_0 = 0$

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

Constant Difference = -4

$-13 - 3 = -\frac{16}{4}$

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

$a_0 = 3$

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

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

$f(5) = \underline{\hspace{2cm}}$, $f(6) = \underline{\hspace{2cm}}$, Recursive Function: $\underline{\hspace{4cm}}$

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

$f(4) = \underline{\hspace{2cm}}$, $f(5) = \underline{\hspace{2cm}}$, Recursive Function: $\underline{\hspace{4cm}}$

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

$f(7) = \underline{\hspace{2cm}}$, $f(8) = \underline{\hspace{2cm}}$, Recursive Function: $\underline{\hspace{4cm}}$