

DO NOW

Given $f(1) = 13$ and $f(n) = \boxed{f(n-1)} - 6$, find $f(4)$.

value of
the previous term

$$f(1) = 13$$

$$f(2) = 7$$

$$f(3) = 1$$

$$\boxed{f(4) = -5}$$

$$f(2) = 13 - 6$$

$$f(2) = 7$$

$$f(3) = 7 - 6$$

$$f(3) = 1$$

$$f(4) = 1 - 6$$

$$f(4) = -5$$

Feb 25-10:57 AM

Homework Answers

1) D

2) D

3) -4

4) 45

5) $5 + (n-1)4$ $4n + 1$

6) C

Arithmetic

$$a_n = a_1 + (n-1)d$$

$$a_1 = 5$$

$$a_n = 5 + 4(n-1)$$

$$a_n = a_{n-1} \boxed{+4} = 5 + 4n - 4$$

$$d \boxed{a_n = 4n + 1}$$

Jan 30-8:12 AM

Recursive Sequences Day 2

Writing a Recursive Formula

Given the sequence $\{5, 15, 45, \dots\}$

Geometric

$$a_1 = 5$$

$$r = 3$$

$$\begin{array}{cc} \checkmark & \checkmark \\ \times 3 & \times 3 \end{array}$$

$$f(1) = 5$$

$$f(n) = f(n-1) \cdot 3$$

↑
value of
the previous

↑
r-value

Feb 29-7:56 AM

Writing Sequence Formulas

Given the sequence $\{-9, -3, -1, -\frac{1}{3}, \dots\}$

Geometric $a_1 = -9$

$$r = \frac{1}{3}$$

Write the recursive formula

$$f(n) = f(n-1) \cdot \frac{1}{3}$$

$$f(1) = -9$$

$$a_1 = -9$$

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

Write the explicit formula

$$a_n = a_1 \cdot r^{n-1}$$

$$a_n = -9 \cdot \left(\frac{1}{3}\right)^{n-1}$$

$$f(n) = -9 \cdot \left(\frac{1}{3}\right)^{n-1}$$

Feb 29-7:56 AM

Writing an Explicit Sequence given a Recursive Formula

Arithmetic

$$f(1) = -5$$

$$f(n) = \boxed{f(n-1)} + 7$$

value of
previous
term

d value

Geometric

$$a_1 = \frac{1}{3}$$

$$a_n = a_{n-1} \cdot -3$$

$$f(n) = f(1) + (n-1)d$$

$$f(n) = -5 + (n-1)7$$

$$f(n) = -5 + 7n - 7$$

$$f(n) = 7n - 12$$

$$a_n = a_1 \cdot r^{n-1}$$

$$a_n = \left(\frac{1}{3}\right)(-3)^{n-1}$$

Feb 29-7:56 AM

Given $f(1) = -5$ and the recursively defined sequence $\boxed{f(n+1)} = \boxed{f(n)} + 6$

Write the first 4 terms of the sequence

$$f(1) = -5$$

$$f(1+1) = \boxed{f(1)} + 6$$

$$f(2) = -5 + 6$$

$$f(n) = \boxed{f(n-1)} + 6$$

$$f(1) = -5$$

$$f(2) = 1$$

$$f(3) = 7$$

$$f(4) = 13$$

Jan 26-10:18 AM