just

another

Which recursively defined function has a first term equal to 10 and a common difference of 4?

$$f(1) = 10$$
(a)  $f(x) = f(x-1) + 4$ 
(b)  $f(x) = f(x) + 4$ 

$$f(x) = f(x) + 4$$

(a) f(1) = 10(b) f(x) = f(x-1) + 4(c) f(1) = 10 f(1) = 10 f(x) = 4f(x-1)(d) f(x) = 10f(x-1)

(n+1)-1 = N

Which recursively defined function represents the sequence 3, 7, 15, 31, ...?

(a) 
$$f(1) = 3$$
  
 $f(n+1) = 2^{f(n)} + 3$   
 $2^3 + 3 = 1$ 

(c) 
$$f(1) = 3$$
  
 $f(n+1) = 2^{f(n)} - 1$   
 $2^{3} - | = 7$   
 $2^{7} - | = |27|$ 

(b) 
$$f(1) = 3$$
  
 $f(n+1) = 2f(n) + 1$   
(d)  $f(1) = 3$   
 $f(n+1) = 3f(n) - 2$ 

## Recursive Sequence Practice:

1) Find the first four terms of the recursive sequence defined

below.

Delow. 
$$a_1 = -3$$
 $a_n = a_{(n-1)} - 3$ 
 $A_1 = -3$ 
 $A_2 = -4$ 
 $A_3 = -4$ 
 $A_4 = -12$ 
 $A_4 = -12$ 
 $A_4 = -12$ 
 $A_5 = -4$ 
 $A_6 = -4$ 
 $A_7 = -4$ 
 $A_8 = -4$ 
 $A_8 = -4$ 
 $A_8 = -4$ 
 $A_9 = -4$ 

Let's talk notation!

$$Q_1 = 1^{S+}$$
 term

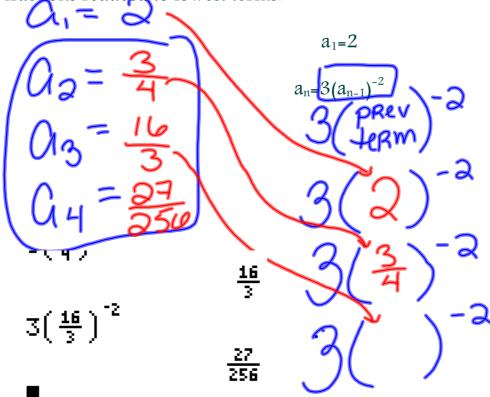
 $Q_n = n^{th}$  term

 $Q_{n-1} = p$ Revious

 $q_n = 1^{th}$ 



Use the recursive sequence defined below to express the next three terms as fractions reduced to lowest terms.





If a sequence is defined recursively by f(0) = 2 and f(n+1) = -2f(n) + 3 for  $n \ge 0$ , then f(2) is equal to

- (a) 1
- (b) -11
- (c) 5
- (d) 17

$$G_0 = 2$$
 $G_{n+1} = -2(2) + 3$ 
 $G_1 = -2(2) + 3$ 
 $G_2 = 5$ 
 $G_2 = 5$ 

Find the third term in the recursive sequence  $a_{k+1} = 2a_k - 1$ , where  $a_1 = 3$ .

$$Q_{1} = 3$$

$$Q_{2} = 2(3) - 1 = 5$$

$$Q_{3} = 2(5) - 1 = 9$$



The Pell numbers can be defined recursively by the formula:

p(n)=2p(n-1)+p(n-2). If p(1)=0, and p(2)=1, then what is the value of p(6)?

If 
$$f(1)=3$$
 and  $f(n)=-2f(n-1)$ , then what is the value of  $f(5)$ ?

 $A_1 = 3$ 
 $A_2 = -10$ 
 $A_3 = 12$ 
 $A_4 = -24$ 
 $A_5 = 48$ 
 $A_6 = -24$ 
 $A_7 = -24$ 
 $A_7$ 

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While experimenting with her calculator, Candy creates the sequence 4, 9, 19, 39, 79, .... Write a recursive formula for Candy's sequence.

Determine the eighth term in Candy's sequence.