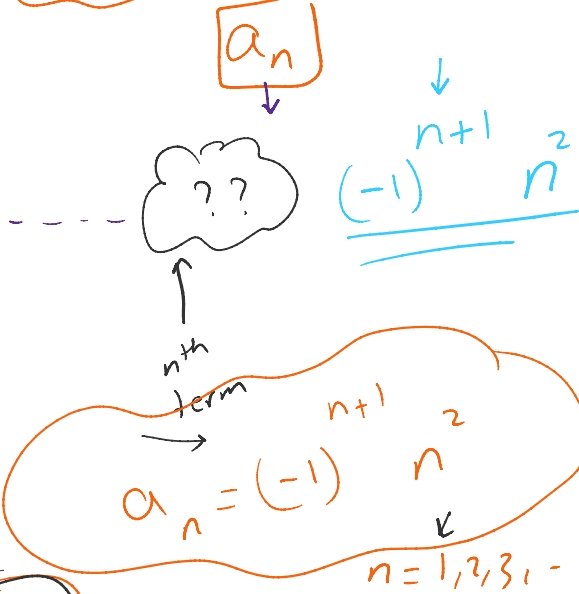
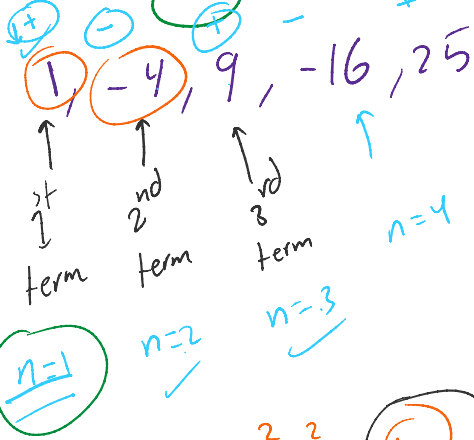


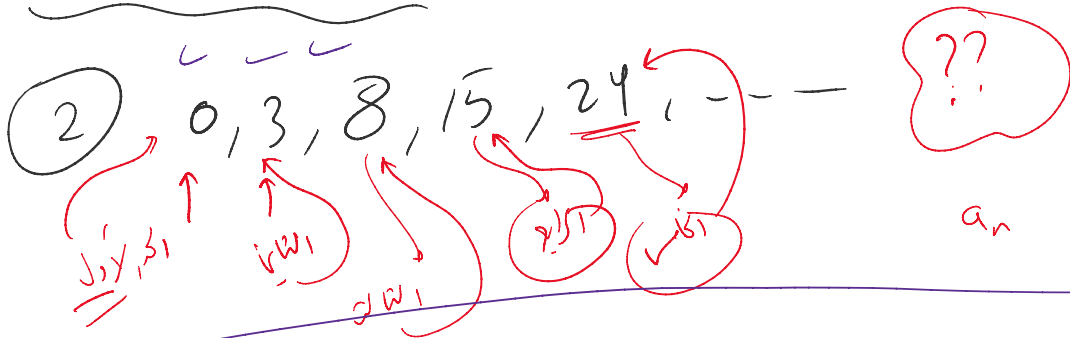
Exp Find the n^{th} term of the following sequences:



$n=1 \Rightarrow a_1 = (-1)^{1+1} 1^2 = 1$
 $n=2 \Rightarrow a_2 = (-1)^{2+1} 2^2 = -4$
 \vdots

$a_n = (-1)^{n+1} (n+1)^2$
 $n = 0, 1, 2, 3, \dots$

$n=0 \Rightarrow a_0 = (-1)^{0+1} (0+1)^2 = -1$
 $n=1 \Rightarrow a_1 = (-1)^{1+1} (1+1)^2 = 4$

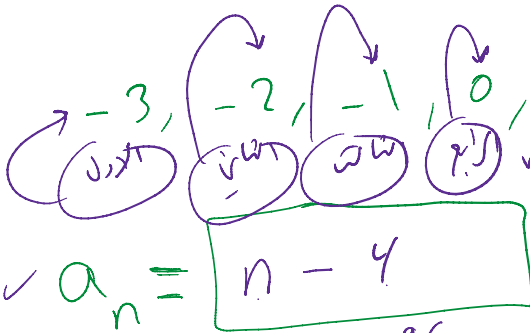


$a_n = n^2 - 1$
 $n = 1, 2, 3, \dots$
 $0, 3, 8$

$$0 - 1 = (-1) \times$$

$$0 \quad 3 \quad 8$$

3



$$a_n = n - 4$$

$$a_{100} = 100 - 4 = \underline{\underline{96}}$$

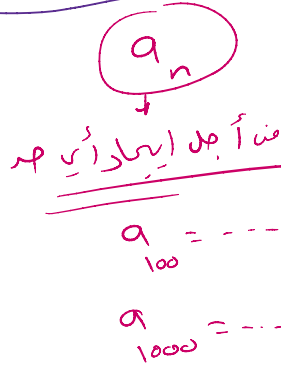
$$n = 1, 2, 3, 4, \dots$$

a_n ???

$$a_n = n - 3, \quad n = 0, 1, 2, 3$$

$$a_n = n - 2, \quad n = -1, 0, 1, 2, \dots$$

Recursive Sequence :



Exp $a_1 = 1, \quad a_{n+1} = \frac{1}{2} a_n$

Assume this sequence converges, find its limit Find $\lim_{n \rightarrow \infty} a_n$

$$a_1 = 1 = \left(\frac{1}{2}\right)^0$$

$$a_2 = a_{1+1} = \frac{1}{2} a_1 = \frac{1}{2} (1) = \left(\frac{1}{2}\right)^1$$

$$a_3 = a_{2+1} = \frac{1}{2} a_2 = \frac{1}{2} \cdot \frac{1}{2} = \left(\frac{1}{2}\right)^2$$

$$a_4 = a_{3+1} = \frac{1}{2} a_3 = \frac{1}{2} \left(\frac{1}{2}\right)^2 = \left(\frac{1}{2}\right)^3$$

$$-1 < x = \frac{1}{2} < +1$$

$$a_4 = \frac{4}{2} + 1 = \frac{1}{2} \cdot 3 - \dots$$

$$a_5 = \left(\frac{1}{2}\right)^4$$

$$a_n = \left(\frac{1}{2}\right)^{n-1}$$

$$\Rightarrow \lim_{n \rightarrow \infty} a_n = \lim_{n \rightarrow \infty} \left(\frac{1}{2}\right)^{n-1}$$

$$= 2(0)$$

$$= \underline{\underline{0}}$$

$$= \left(\frac{1}{2}\right)^{-1} \lim_{n \rightarrow \infty} \left(\frac{1}{2}\right)^n$$

↓
0