Recursive Notation

$a_1 = 12$

$a_{10} = 57$

<u>need to find:</u>

$d - ?$

$a_{25} - ?$

to find "d" we need to use this formula:

$$\boxed{d = \frac{a_n - a_1}{n-1}}$$

$$d = \frac{a_{10} - a_1}{10 - 1} = \frac{57 - 12}{9} = \frac{45}{9} = 5$$

Answer: $\boxed{d = 5}$

Now we need to find $\rightarrow a_{25}$?
we need to use n-term formula:

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

For a_{25}, $n - 1 = 24$

$$a_{25} = 12 + (n-1) \cdot 5$$

$$= 12 + 24 \cdot 5 = 12 + 120 = 132$$

Answer: $\boxed{a_{25} = 132}$

(5) is common difference

$a_{25} = 132$