Problem:

Find S_{15} (sum of first 15 terms) of arithmetic progression if $a_1 = 0$ and $d = 3$.

Result:

$$S_{15} = 315$$

Explanation:

To find S_{15} we use formula

$$S_n = \frac{n}{2} \cdot (2a_1 + (n-1) \cdot d)$$

In this example we have $a_1 = 0$, $d = 3$, $n = 15$. After substituting these values into the above equation, we obtain:

$$S_n = \frac{n}{2} \cdot (2a_1 + (n-1) \cdot d)$$

$$S_{15} = \frac{15}{2} \cdot (2 \cdot 0 + (15-1) \cdot 3)$$

$$S_{15} = \frac{15}{2} \cdot (0 + 14 \cdot 3)$$

$$S_{15} = \frac{15}{2} \cdot (0 + 42)$$

$$S_{15} = \frac{15}{2} \cdot 42$$

$$S_{15} = 315$$

The first few terms of this sequence are:

$$0, \quad 3, \quad 6, \quad 9, \quad 12...$$