

## Answer on Question #77203 – Math – Algebra

### Question

The first three terms of an arithmetic progression are;  $2x$ ,  $x+4$ ,  $2x-7$ .....find the value of  $x$  and determine  $T_{12}$

### Solution

$$a_1 = 2x, \quad a_1 + d = x + 4, \quad a_1 + 2d = 2x - 7.$$

$$\begin{cases} 2x + d = x + 4 \\ 2x + 2d = 2x - 7 \end{cases} \rightarrow \begin{cases} x + d = 4 \\ 2d = -7 \end{cases} \rightarrow d = -\frac{7}{2}, \quad x = 4 - d = \frac{15}{2}.$$

$$a_{12} = a_1 + 11d = 2 \cdot \frac{15}{2} - \frac{77}{2} = 15 - \frac{77}{2} = -\frac{47}{2}.$$

**Answer:**  $\frac{15}{2}; -\frac{47}{2}$ .