Answer on Question#39792 – Math - Algebra

Question.

Separate 178 into two parts such that the first part is 8 less than twice the second part.

Solution:

Suppose that

$$x + y = 178.$$

Also we have next condition

$$x - 2y = 8.$$

Thus we get next system of equation

$$\begin{cases} x + y = 178, \\ x - 2y = 8, \end{cases} \Rightarrow \begin{cases} x + y - (x - 2y) = 178 - 8, \\ x = 8 + 2y, \end{cases} \Rightarrow \begin{cases} 3y = 170, \\ x = 8 + 2y, \end{cases} \Rightarrow \begin{cases} y = 56\frac{2}{3}, \\ x = 8 + 2 \cdot 56\frac{2}{3}, \end{cases} \Rightarrow$$

$$\Rightarrow \begin{cases} y = 56\frac{2}{3}, \\ x = 121\frac{1}{3}. \end{cases}$$

Answer:

$$121\frac{1}{3} \quad and \quad 56\frac{2}{3}$$