DAY - 28

Given:

Total bones = 64.

Let the number of skull bones be x.

Then,

$$\begin{cases} \text{Rib bones} = 2x, \\ \text{Leg bones} = 2x - 6. \end{cases}$$

(a) Forming the equation:

$$x + 2x + (2x - 6) = 64$$

(b) Solving for x :

$$\begin{aligned} x + 2x + 2x - 6 &= 64 \\ 5x - 6 &= 64 \\ 5x &= 64 + 6 \\ 5x &= 70 \\ x &= \frac{70}{5} \\ x &= 14 \end{aligned}$$

Therefore:

$$\begin{aligned} \text{Skull bones} &= x = 14, \\ \text{Rib bones} &= 2x = 28, \\ \text{Leg bones} &= 2x - 6 = 22. \end{aligned}$$

Verification: $14 + 28 + 22 = 64$

(c) Finding total length of all bones:

$$\begin{aligned} \text{Average length of skull bone} &= 25 \text{ cm}, \\ \text{Average length of rib bone} &= 15 \text{ cm}, \\ \text{Average length of leg bone} &= 40 \text{ cm}. \end{aligned}$$

$$\text{Total length} = (14 \times 25) + (28 \times 15) + (22 \times 40)$$

$$\Rightarrow \text{Total length} = 350 + 420 + 880 = 1650 \text{ cm}$$

(a) $x + 2x + (2x - 6) = 64$,
(b) Skull $= 14$, Rib $= 28$, Leg $= 22$,
(c) Total length $= 1650$ cm.