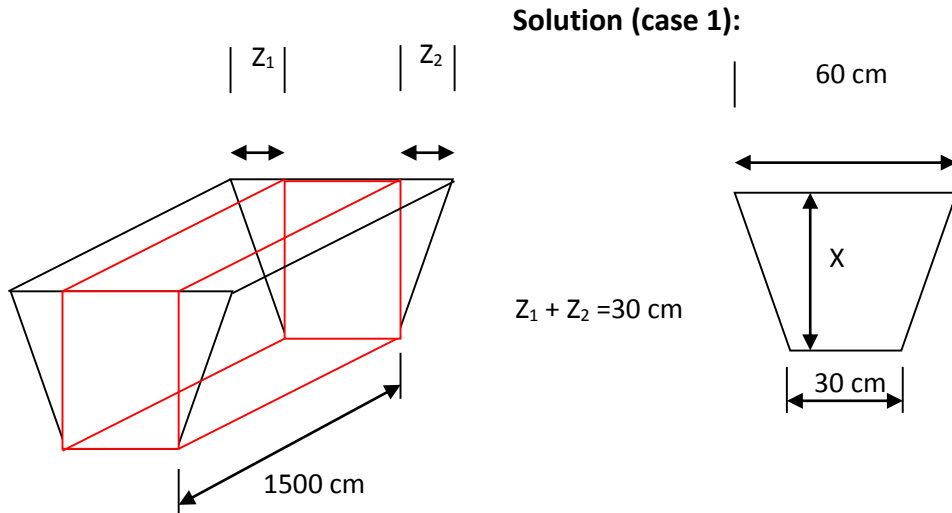


## Answer on Question #56336 – Math – Geometry

A trough 15 m long and has bottom 30 cm and 60 cm. Its cross-section is a trapezium. Find its volume.



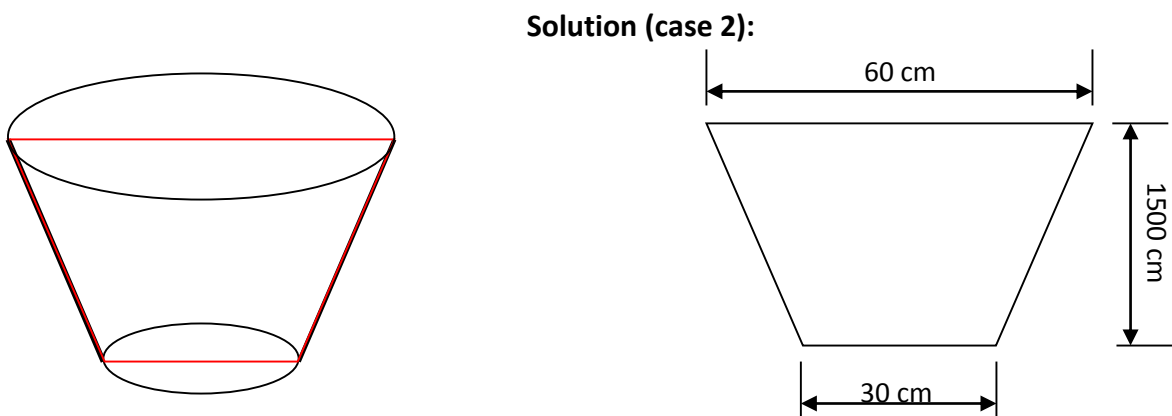
The problem did not specify the height of the trough, so let it be  $X$ .

We cut our figure into two. The volume of the parallelepiped is  $1500 \cdot 30x = 45\,000x \text{ cm}^3$

The volume of the pyramid is  $0.5 \cdot 1500 \cdot 30x = 22\,500x \text{ cm}^3$ .

The volume of the trough is  $45\,000x + 22\,500x = 67\,500x \text{ cm}^3$ .

**Answer:**  $67\,500 \cdot x \text{ cm}^3$ , where  $x$  is the height of the trough.



If this interpretation of conditions is true, then the volume of the trough will be equal as follows:

$$V = \frac{1}{3}\pi H(R_1^2 + R_1R_2 + R_2^2) = \frac{1}{3}\pi \cdot 1500 \cdot (30^2 + 30 \cdot 60 + 60^2) = 3\,150\,000\pi$$

$$\approx 9\,896\,017 \approx 9\,900\,000 \text{ cm}^3 = 9.9 \text{ m}^3 = 9\,900 \text{ liter}$$

**Answer:**

$$9\,900\,000\text{ cm}^3 = 9.9\text{ m}^3 = 9\,900\text{ liter}$$