



Surface Area and volume of A Right Circular cylinder Ex 19.2 Q30

Answer :

Given data is as follows:

Height of the tube well = 280 m

Diameter = 3 m

Rate of sinking the tube well = Rs.3.60/ m^3

Rate of cementing = Rs.2.50/ m^2

Given is the diameter of the tube well which is 3 meters. Therefore,

$$r = \frac{3}{2} \text{ m}$$

Volume of the tube well = $\pi r^2 h$

$$= \frac{22}{7} \times \frac{3}{2} \times \frac{3}{2} \times 280$$
$$= 1980 \text{ m}^3$$

Cost of sinking the tube well = Volume of the tube well \times Rate for sinking the tube well

$$= 1980 \times 3.60$$

$$= \text{Rs. } 7128$$

Curved surface area = $2\pi rh$

$$= 2 \times \frac{22}{7} \times \frac{3}{2} \times 280$$
$$= 2640 \text{ m}^2$$

Cost of cementing = Curved Surface Area \times Rate of cementing

$$= 2640 \times 2.50$$

$$= \text{Rs. } 6600$$

Therefore, the total cost of sinking the tube well is Rs.7128 and the total cost of cementing its inner surface is Rs.6600.

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