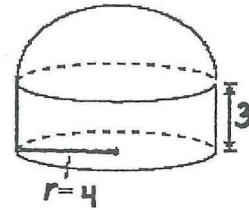


- 75 The top of the cylindrical container shown has the shape of a hemisphere. The total volume of the container is 284.8 u<sup>3</sup>



$$V(\text{cylinder}) \\ V = \pi(4)^2(3) \\ 48\pi$$

$$V(\text{sphere}) \\ V = \left(\frac{4\pi(4)^3}{3}\right) \frac{1}{2}$$

$$+ \frac{128\pi}{3} = \boxed{\frac{272\pi}{3} \text{ u}^3}$$

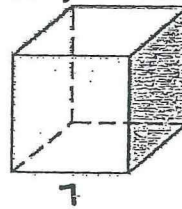
- 76 Find the surface area of a sphere that has a diameter of 12 cm. Express your answer in terms of  $\pi$ .

$$144\pi \text{ cm}^2$$

$$r = 6$$

$$S = 4\pi(6)^2 \\ = 4\pi(36) \\ = 144\pi$$

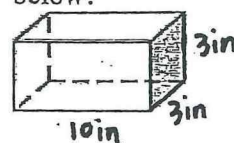
- 77 The dimensions of the right cube shown below are doubled. The volume of the new prism is how many times as great as the original prism?



8 times

$$\frac{a}{b} = \frac{1}{2} \rightarrow \frac{a^3}{b^3} = \boxed{\frac{1}{8}}$$

- 78 What is the surface area of the right prism shown below?



$$S = 138 \text{ in}^2$$

$$B = 10(3) \quad P = 2(10) + 2(3) \\ = 30 \quad = 26$$

$$h = 3$$

$$S = Ph + 2B$$

$$S = 26(3) + 2(30)$$

$$= 138 \text{ in}^2$$