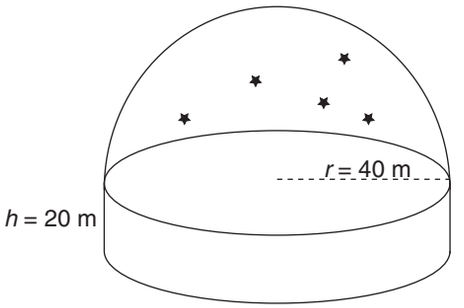
Lesson 2.3: Composite Objects Applications

Practice – IV

1. a. A space dome theatre is composed of a cylindrical base and a hemispherical roof. Sketch the space dome theatre with a base radius of 40 m and a cylindrical height of 20 m.



b. What is the total volume of the space dome theatre?

$$V_{\text{theatre}} = \left(\frac{4}{3}\pi r^3\right) \div 2 + \pi r^2 h$$

$$V_{\text{theatre}} = \frac{2}{3}\pi r^3 + \pi r^2 h$$

$$V_{\text{theatre}} = \frac{2}{3}\pi(40\text{ m})^3 + \pi(40\text{ m})^2 \cdot 20\text{ m}$$

$$V_{\text{theatre}} = \frac{2}{3}\pi(64\,000\text{ m}^3) + \pi(32\,000\text{ m}^3)$$

$$V_{\text{theatre}} \doteq 234\,572.25\text{ m}^3$$

Please complete *Lesson 2.3 Explore Your Understanding Assignment* located in *Workbook 2.3.*