

$$A_T = 1840 \text{ cm}^2 = A_L + 2A_b = Ph + 2 \frac{Sap}{2}$$

Lesson 44-46

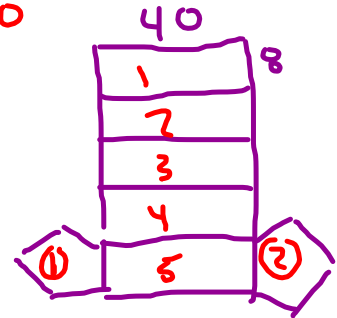
1. A pentagonal right prism is 40cm tall. Each side of the pentagon measures 8cm and the apothem is 6cm. what is the total surface area of this prism?



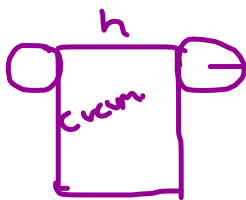
$$A_{\text{pent}} = \frac{Sap}{2} = \frac{8(6)(5)}{2} = \frac{240}{2} = 120$$

$$A_{\text{rect}} = LW = 40(8) = 320$$

$$A_T = 5(320) + 2(120) = 1600 + 240 = 1840 \text{ cm}^2$$



2. Find the total surface area of a cylinder whose bases are 10cm in diameter and whose height is 15cm.



$$r = \frac{d}{2} = \frac{10}{2} = 5$$

$$\begin{aligned} A_T &= 2\pi rh + \pi r^2 + \pi r^2 \\ &= 2(3.14)(5)(15) + 3.14(5^2) + 3.14(5^2) \\ &= 471 + 78.5 + 78.5 \\ &= 628 \text{ cm}^2 \end{aligned}$$

3. A net of a pyramid is represented on the right. The base is a regular pentagon with a side length of 20cm and a 13.8cm apothem. The pyramid has a slant height of 12cm. Calculate:

- a) The area of the base:

$$A_b = \frac{Sap}{2} = \frac{20(13.8)(5)}{2} = 690$$

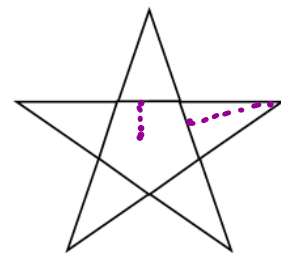
- b) The lateral area:

$$A_{\text{Triangle}} = \frac{bh}{2} = \frac{20(12)}{2} = 120$$

$$A_L = 5(120) = 600$$

- c) The total area:

$$A_T = 690 + 600 =$$



Lesson 44-46

4. The roof of a house has the shape of a pyramid with a square base whose side length is 12m. The pyramid's slant height is 4m. We repaint the roof with paint that costs \$18 per litre. If one litre of paint covers 3m², determine the total cost of the paint needed.

$$\textcircled{1} A_{\text{roof}} = A_L = \frac{P_b (SH)}{2} \quad \text{or} \quad 4 \left(\frac{b^2}{2} \right) = 96 \text{ m}^2$$

$$\textcircled{2} \frac{1 \text{ L}}{3 \text{ m}^2} = \frac{x}{96 \text{ m}^2} = 32 \text{ L}$$

$$\textcircled{3} \text{ Cost} = 32 (18) = \$576.$$

5. A farmer has a cylindrical silo 15m high and a radius of 4m, how much paint would be required to paint the exterior of the silo if one litre of paint covers 10 square metres? (Not the bottom nor the top)

$$\textcircled{1} A_L = 2\pi rh = 376.8$$

$$\textcircled{2} \frac{376.8}{10} = 37.68 \Rightarrow 38 \text{ L}$$

6. Mr. Fixit is building a laundry room in his basement. It will measure 4 meters by 5 metres. If he intends on painting the walls, ceiling and door with 2 coats of paint, and each litre of paint covers 70m², how many litres of paint should he buy?

$$h = 2 \text{ m}$$



$$\textcircled{1} A_T = 36 + 20 = 56 \text{ m}^2$$

$$\textcircled{2} 2(56) = 112 \text{ m}^2$$

$$\textcircled{3} \frac{112}{70} = 1.6 \Rightarrow 2 \text{ L}$$

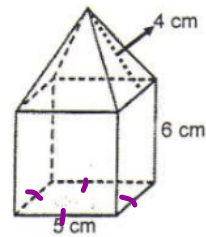


Decomposable Solids

Lesson 46

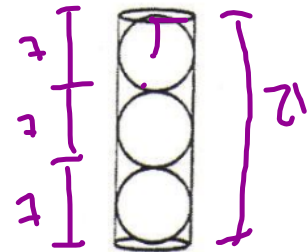
1. Determine the total surface area of the following solid that is composed of a squared-base prism topped with a pyramid.

$$\begin{aligned} A_T &= A_L(\text{pyr}) + A_L(\text{prism}) + A_b \\ &= 4\left(\frac{4(5)}{2}\right) \\ &= 40 + 120 + 25 = 185 \text{ cm}^2 \end{aligned}$$



2. Calculate the total surface area of the cylinder, given that the radius of each sphere is 3.5 cm.

$$A_T = 538.51 \text{ cm}^2$$



Missing measure

1. The lateral area of a cylinder is approximately 446.11 mm^2 . The radius of the cylinder is 71 mm . What is the height of the cylinder?

$$h = 1 \text{ mm}^2$$

2. The lateral area of a square based pyramid is $14\,260 \text{ m}^2$. Its slant height measures 31 m . What is the perimeter of the base?

$$P_b = 920 \text{ m}^2$$