

Unit 5

L7 Volumes of Prisms & Cylinders

Consider a pack of printer papers. With dimensions:
l = 28 cm; w = 21.5 cm; h = 5 cm.

Area of one paper: A = lw = (28)(21.5) = 602 cm²

The space this pack occupies (volume):



$$= (602)(5) = 3010 \text{ cm}^3$$

$$V_{\text{prism}} = A_b \bullet h$$

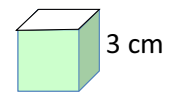
$$V_{\text{cube}} = w^3$$

$$V_{\text{cylinder}} = \pi r^2 \bullet h$$

1

Ex 1: Determine the volume of this cube

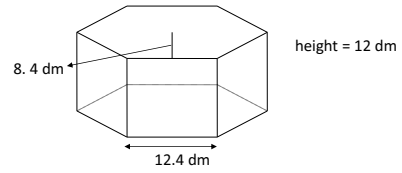
$$V_{\text{cube}} = w^3$$



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Ex 2: Determine the volume of this prism

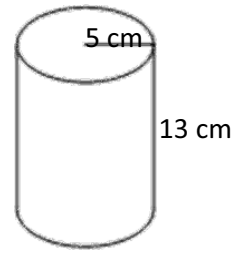
$$V_{\text{prism}} = A_b \bullet h$$



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Ex 3: Determine the volume of this cylinder

$$V = \pi r^2 \bullet h$$



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Ex 4: Find the volume of this hot air balloon

D = 14 m
R = 7 m
H = 35 m



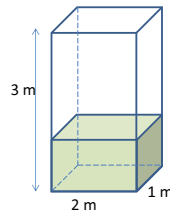
Diameter = 14 m
Height is 2.5 times the diameter

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Ex 5:

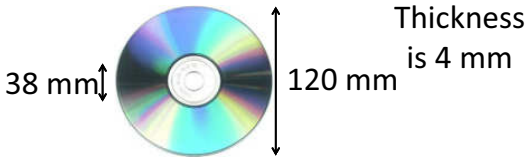
This tank is filled with 1500 L of gas. How much time will be required to fill the rest of it at a rate of 20 L/min?

$$V_{\text{tank}} = A_b \bullet h$$



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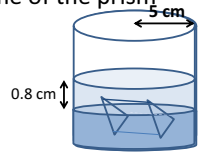
Ex 6: Determine the volume of material required to make a cd in mL



r = 19 mm
R = 60 mm
h = 4 mm

Ex 7:

A triangular base prism is submerged in a cylindrical bucket of water with a 5 cm radius. The water level in the bucket rises 0.8 cm. What is the volume of the prism submerged in the water?



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Practice:
5.6 Set 1



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