MEMO 2020-10ℰM-00002(1) Volume

(1) Calculate the volume of the following:
[If necessary, round off to the nearest integer.]

(a) a prism on a rectangular base with length 18 cm and breadth 14 cm and a height of 7 cm.

Volume = L × B × H

= 18 × 14 × 7

= 1 764 cm^3

(b) a pyramid on a square base with sides 5 mm each and the perpendicular height of the pyramid is 6,5 mm.

Volume = $\frac{1}{3}$ AH

= $\frac{1}{3} \times (5 \times 5) \times 6,5$

= 54, 166 ....

≈ 54 mm^3

(c) a sphere with diameter 18 mm → **radius = 9 mm**.

Volume = $\frac{4}{3}\pi r^3$

= $\frac{4}{3}\pi(9)^3$

= 763

≈ 763 mm^3

(d) a cone where the radius of the base is 4 cm and the perpendicular height of the cone is 8 cm.

Volume = $\frac{1}{3}$ AH

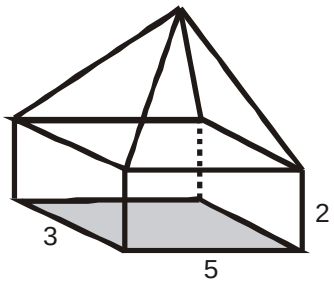
= $\frac{1}{3} \times (\pi r^2) \times$ H

= $\frac{1}{3} \times (\pi \times 4^2) \times 10$

= 167, 551 ....

≈ 168 cm^3

(2) Calculate the total surface area of the figure if all dimensions are given as cm.
The perpendicular height of the pyramid is 7 cm.



Total volume = rectangular prism + pyramid on rectangular base

$$= [L \times B \times H] + \left[\frac{1}{3}AH\right]$$

$$= [5 \times 3 \times 2] + \left[\frac{1}{3} \times (L \times B) \times H\right]$$

$$= [5 \times 3 \times 2] + \left[\frac{1}{3} \times (5 \times 3) \times 7\right]$$

$$= [30] + [35]$$

$$= 65\ cm^3$$