Exercise 13B

Question 17:

$\text{Length} = 7\,\text{cm} = (\text{height})$

$\text{Diameter} = 5\text{mm} \Rightarrow \text{radius} = \left(\frac{5}{2}\right)\text{mm} = 2.5\text{mm}$

$= 0.25\ \text{cm}$

$\therefore \quad \text{Volume of the barrel} = \pi r^2 h$

$= \left(\frac{22}{7} \times 0.25 \times 0.25 \times 7\right) \text{cm}^3$

$= \frac{11}{8}\ \text{cm}^3$

$\frac{11}{8}\ \text{cm}^3$ is used for writing 330 words.

So, $\left(\frac{1}{5} \times 1000\right) \text{cm}^3$ will be used for writing

$\left(330 \times \frac{8}{11} \times \frac{1}{5} \times 1000\right)$ words

$= \ 48000$ words

Question 18:

$\text{Weight of the graphite} = \left[\frac{22}{7} \times (0.05)^2 \times 10 \times 2.1\right] \text{g}$

$= \frac{33}{200}\,\text{g}$

$\text{Weight of wood} = \left[\frac{22}{7} \times 10\left\{(0.35)^2 - (0.05)^2\right\} \times 0.7\right]$

$= \left[\frac{22}{7} \times 10(0.1225 - 0.0025) \times 0.7\right]$

$= \frac{66}{25}\,\text{g}$

$\therefore \quad \text{Total weight of the pencil} = \left(\frac{33}{200} + \frac{66}{25}\right) \text{g}$

$= \left(\frac{33 + 528}{200}\right) \text{g} = \frac{561}{200} = 2.805\,\text{g}$

$\therefore$ Weight of the whole pencil = 2.805 g

********** END **********