

**Answer on Question #58766-Physics-Other**

In one cubic meter, on average is 25 billion snowflakes. In Manitoba there is 650 thousand square km. if an Avogadro's number were to fall on Manitoba, how deep would the snow be?

**Solution**

The density of snowflakes is

$$n = \frac{25 \cdot 10^9}{1 \text{ m}^3} = 25 \cdot 10^9 \frac{1}{\text{m}^3}.$$

$$V = \frac{N_A}{n} = \frac{6.022 \cdot 10^{23}}{25 \cdot 10^9} = 2.4088 \cdot 10^{13} \text{ m}^3.$$

$$h = \frac{V}{A} = \frac{2.4088 \cdot 10^{13} \text{ m}^3}{650 \cdot 10^3 (10^3 \text{ m})^2} = 37 \text{ m}.$$

**Answer: 37 m.**