“Answer on Question #59376, Chemistry / General Chemistry”

How many g of $Ca(OH)_{2(s)}$ are needed to make 1 L of a 1 M solution of $Ca(OH)_{2(aq)}$?

$\mathrm{C}\boldsymbol{m} - \boldsymbol{molarity}$

$\boldsymbol{M} - \boldsymbol{molar\ mass}$

$\mathrm{C}\boldsymbol{m} = \mathbf{1}\ \boldsymbol{M}$

$\boldsymbol{M}(\boldsymbol{Ca}(\boldsymbol{OH})_{\mathbf{2}}) = 74\mathrm{g/mol}$

V = 1L

$$\mathrm{C}\boldsymbol{m} = \frac{\boldsymbol{n}}{\boldsymbol{V}}$$

$$\boldsymbol{n} = \frac{\boldsymbol{m}}{\boldsymbol{M}}$$

$$\mathrm{C}\boldsymbol{m} = \frac{\boldsymbol{m}}{\boldsymbol{M} \cdot \boldsymbol{V}}$$

$$\boldsymbol{m} = \mathrm{C}\boldsymbol{m} \cdot \boldsymbol{M} \cdot \boldsymbol{V}$$

$$\boldsymbol{m} = \mathbf{1}\boldsymbol{M} \cdot \mathbf{74}\boldsymbol{g/mol} \cdot \mathbf{1}\boldsymbol{L} = \mathbf{74}\boldsymbol{g}$$