What volume of 1.50 M Na$_2$CO$_3$ solution can be prepared from 2.00 g of solid Na$_2$CO$_3$?

Solution: As you know, molar concentration of solution can be calculated as:

$C(Na_2CO_3) = \dfrac{m(Na_2CO_3)}{M(Na_2CO_3) \cdot V}$, where C is the concentration, mol/L; m is the mass of dissolved sodium

carbonate, g; M is the molar mass of sodium carbonate, M(Na$_2$CO$_3$) = 23·2+12+16·3 = 106 g/mol;

V is the volume of solution, L;

Then, $V = \dfrac{m(Na_2CO_3)}{M(Na_2CO_3) \cdot C(Na_2CO_3)} = \dfrac{2}{106 \cdot 1.5} = 0.0126$ L $= 12.6$ mL

Answer: 12,6 mL.