38. (a) If the volume of the car below water is V_1 then $F_b = \rho_w V_1 g = W_{\text{car}}$, which leads to

$$V_1 = \frac{W_{\text{car}}}{\rho_w g} = \frac{(1800\,\text{kg})\left(9.8\,\text{m/s}^2\right)}{(1000\,\text{kg/m}^3)\,(9.8\,\text{m/s}^2)} = 1.80\ \text{m}^3\ .$$

(b) We denote the total volume of the car as V and that of the water in it as V_2. Then

$$F_b = \rho_w V g = W_{\text{car}} + \rho_w V_2 g$$

which gives

$$\begin{aligned} V_2 &= V - \frac{W_{\text{car}}}{\rho_w g} \\ &= \left(0.750\,\text{m}^3 + 5.00\,\text{m}^3 + 0.800\,\text{m}^3\right) - \frac{1800\,\text{kg}}{1000\,\text{kg/m}^3} \\ &= 4.75\ \text{m}^3\ . \end{aligned}$$