71. The downward force on the balloon is mg and the upward force is $F_b = \rho_{\text{out}} V g$. Newton's second law (with $m = \rho_{\text{in}} V$) leads to

$$\rho_{\text{out}} V g - \rho_{\text{in}} V g = \rho_{\text{in}} V a \quad \Longrightarrow \quad \left(\frac{\rho_{\text{out}}}{\rho_{\text{in}}} - 1 \right) g = a \ .$$

The problem specifies $\rho_{\text{out}}/\rho_{\text{in}} = 1.39$ (the outside air is cooler and thus more dense than the hot air inside the balloon). Thus, the upward acceleration is $(1.39 - 1)(9.8) = 3.8\,\text{m/s}^2$.