

26. We use $Q = cm\Delta T$. The textbook notes that a nutritionist's "Calorie" is equivalent to 1000 cal. The mass m of the water that must be consumed is

$$m = \frac{Q}{c\Delta T} = \frac{3500 \times 10^3 \text{ cal}}{(1 \text{ g/cal} \cdot \text{C}^\circ)(37.0^\circ\text{C} - 0.0^\circ\text{C})} = 94.6 \times 10^4 \text{ g} ,$$

which is equivalent to $9.46 \times 10^4 \text{ g}/(1000 \text{ g/liter}) = 94.6$ liters of water. This is certainly too much to drink in a single day!