

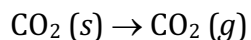
Name: \_\_\_\_\_

**Useful information:**

$$R = 0.08206 \frac{\text{L} \cdot \text{atm}}{\text{mol} \cdot \text{K}}$$

Molecular weight of CO<sub>2</sub> = 44.01 g/mol

The sublimation of dry ice (solid CO<sub>2</sub>) occurs at temperatures above 194.65 K and is given by the following chemical equation:



You buy a party balloon with a maximum capacity of 1.50 L and place a 2.00 g piece of dry ice into the balloon at 298 K and 1.00 atm. If you tie the balloon so no gas leaks, will the balloon pop before its contents reach room temperature? Show your work.