

Name: _____

Period: _____

Gas Laws Review Problems

1. The approximate volume of the Goodyear blimp is $5.74 \times 10^6 \ell$, and the operating pressure is approximately 1.005 atm. On a 25°C day, how many tonnes of helium are needed to inflate the blimp? (1 tonne = 1,000 kg = 10^6 g)
2. On a 25°C day, the Goodyear blimp is inflated with helium to its operating volume of $5.74 \times 10^6 \ell$. During a flight, the temperature drops to 15°C . (Assume the pressure remains constant.) What is the new volume of the blimp?
3. If the O_2 molecules in the Goodyear blimp are moving at an average velocity of 443 m/s, use Graham's law to calculate the average velocity of the helium molecules.