

Worksheet: Introduction to Gases Key

1. Explain why gases have low densities.

Very large volume for small amount of gas particles
due to fast movement.

2. Do you think pressure would increase or decrease when temperature increases?

Why?

Pressure increases as temperature increases.

As temperature increases, particles move faster, increasing
collision force on side of container, which is pressure.

3. Identify property of gas that is measured in each of the following:

a. 425 K

temperature

b. 1.0 atm

pressure

c. 10.0 L

volume

d. 755 mm Hg

pressure

e. 2.00 g O₂

amount

f. 350 K

temperature

g. 0.50 mol of He

amount

h. 43.7 mL

volume

i. 396 kPa

pressure

4. Perform the following conversions:

a. 0.50 atm to mm Hg

$$0.50 \text{ atm} \times \frac{760 \text{ mmHg}}{1 \text{ atm}} = \boxed{380 \text{ mmHg}}$$

b. 750 torr to psi

$$750 \text{ torr} \times \frac{14.7 \text{ psi}}{760 \text{ torr}} = \boxed{15 \text{ psi}}$$

c. 467 mm Hg to kPa

$$467 \text{ mmHg} \times \frac{101.325 \text{ kPa}}{760 \text{ mmHg}} = \boxed{62.3 \text{ kPa}}$$

d. 37 psi to atm

$$37 \text{ psi} \times \frac{1 \text{ atm}}{14.7 \text{ psi}} = \boxed{2.5 \text{ atm}}$$