

This print-out should have 14 questions. Multiple-choice questions may continue on the next column or page – find all choices before answering. The due time is Central time.

Trial

14:01, basic, numeric, < 1 min, wording-variable.

001

a) Convert a pressure of 1.75 atm to kPa. Answer in units of kPa.

002

b) Convert a pressure of 1.75 atm to mm Hg. Answer in units of mm Hg.

Mlib 04 1083

14:10, general, multiple choice, > 1 min, fixed.

003

Identify the correct statement regarding the Kinetic Molecular Theory.

1. Gas particles are closely associated with each other.
2. Gas molecules are moving very slowly.
3. Intermolecular forces are strong.
4. Collisions are effective (inelastic).
5. As temperature decreases, this causes velocity to decrease.

Mlib 04 1059

14:10, general, multiple choice, > 1 min, fixed.

004

The molecules of all samples of ideal gases have the same average kinetic energies at the same

1. volume.
2. pressure.
3. mass.
4. density.

5. temperature.

Mlib 04 1183

14:10, general, multiple choice, > 1 min, fixed.

005

Which of the following statements about the Kinetic-Molecular Theory of gases is false?

1. Gases consist of molecules in continuous, random motion.
2. The average kinetic energy of a gas molecule is independent of the temperature.
3. Collisions between molecules are elastic.
4. The distance between molecules is much larger than the diameter of each molecule.

Mlib 04 1013

14:02, general, multiple choice, > 1 min, fixed.

006

A 6.5 L sample of nitrogen at 25°C and 1.5 atm is allowed to expand to 13.0 L. The temperature remains constant. What is the final pressure?

1. 0.063 atm
2. 0.12 atm
3. 0.75 atm
4. 3.0 atm
5. 0.38 atm

Holt da 10 2 sample 2

14:02, highSchool, numeric, < 1 min, normal.

007

A helium-filled balloon contains 125 mL of gas at a pressure of 0.974 atm. What volume will the gas occupy at standard pressure? Answer in units of mL.

Brad C12 003

14:03, general, multiple choice, > 1 min, fixed.

008

If the temperature of a fixed amount of gas is increased at constant pressure its volume will

1. increase.
2. decrease.
3. remain the same.
4. Insufficient data to answer this question

Msci 12 0507

14:03, general, multiple choice, > 1 min, fixed.

009

If the Kelvin temperature of an ideal gas is doubled while maintaining a constant pressure,

1. the volume doubles.
2. the volume is halved.
3. the pressure doubles.
4. the volume increases by a factor of 4.

Holt da 10 rev 49

14:04, highSchool, numeric, < 1 min, normal.

010

A weather balloon at Earth's surface has a volume of 4 L at 304 K and 755 mm Hg. If the balloon is released and the volume reaches 4.08 L at 728 mm Hg, what is the temperature? Answer in units of K.

Mlib 04 1057

14:04, general, multiple choice, > 1 min, fixed.

011

At STP a gas occupies 121 mL. How many milliliters will this gas occupy at -52°C and 1.18 atm?

1. 83.0 mL
2. -19.5 mL

3. 115 mL

4. 127 mL

Msci 02 1209

14:10, general, multiple choice, > 1 min, fixed.

012

A steel tank containing helium is cooled to 15°C . If you could look into the tank and see the gas molecules, what would you observe?

1. The molecules would sink to the bottom of the tank because of the loss of pressure.
2. The molecules would move to the center of the tank because their velocities would be lower, thus giving them less pressure.
3. The gas molecules would still be uniformly distributed around the tank because gases expand to fill up the whole volume due to their constant molecular motion.
4. The gas molecules would become uniformly distributed near the entire wall of the tank because the molecules would try to escape the container due to their kinetic energies.
5. The gas molecules would have higher kinetic energies and lower velocities, thus creating no net change.

Msci 12 1104

14:09, general, multiple choice, > 1 min, fixed.

013

A mixture of CO, CO₂ and O₂ is contained within a 275 mL flask at 0°C . If the total pressure is 780 torr, the CO has a partial pressure of 330 torr and the CO₂ has a partial pressure of 330 torr, what is the partial pressure of O₂?

1. 330 torr
2. 120 torr
3. 660 torr

4. 780 torr

5. 900 torr

Nsci 12 1107

14:09, general, numeric, > 1 min, normal.

014

A 875 mL sample of nitrogen (N_2) was collected by displacement of water at 24°C under a total barometric pressure of 875 torr. What mass of dry nitrogen was collected? The vapor pressure of water at 24°C is 22 torr. Answer in units of g.