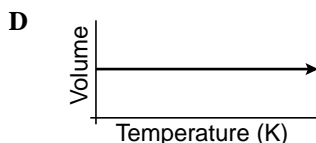
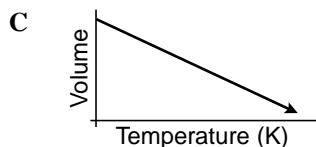
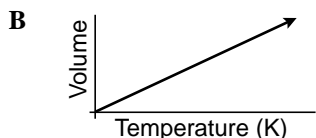
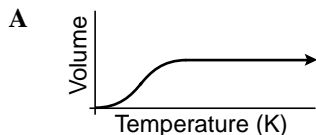


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- 1 Charles's Law explains the relationship between the temperature and volume of a gas. Which graph best represents this relationship?



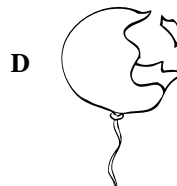
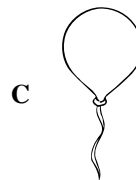
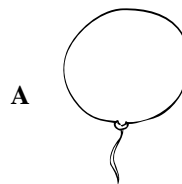
- 2 The kinetic-molecular theory of gases explains the behavior of gases at the molecular level. All of the following are part of this theory EXCEPT —

- A gas molecules experience completely elastic collisions
- B all gas molecules have the same average kinetic energy at the same temperature
- C gas particles are in constant, random motion
- D gas molecules are incompressible

- 3 Which of these *decreases* as a given volume of gas increases?

- A Number of gas particles
- B Temperature
- C Pressure
- D Kinetic energy

- 4 You are given a balloon filled with a known volume of helium gas. You place the balloon inside a freezer for an hour. How will the balloon look after being in the freezer?



Name: _____ Date: _____

- 5 Physicians can use liquid nitrogen to freeze and destroy warts and other skin growths. Knowing the assumptions of the universal gas law, this should surprise you *most* because —
- A if a gas can liquefy, that would imply that gases experience intermolecular forces
 - B all gases are volatile and can't be used indoors
 - C gas particles are too small to be condensed
 - D if a gas can freeze, that would imply that gases can be kept at cold temperatures
- 6 David has two containers of two different gases at the same temperature and pressure. David could assume all of following EXCEPT —
- A when the temperature is increased, the volume of both containers will increase
 - B when the pressure is increased, the volume of both containers will decrease
 - C both containers contain the same number of gas particles
 - D when the pressure is decreased, the temperature of both containers will increase
- 7 Which of the following is a gas–gas behavior relationship?
- A Helium gas is heated and its volume increases.
 - B Oxygen gas is compressed and its temperature increases.
 - C Nitrogen gas is placed in a container and the molecules settle to the bottom.
 - D Hydrogen gas is cooled and its pressure increases.
- 8 Which question cannot be answered scientifically?
- A How many particles do two gases at the same temperature and pressure contain?
 - B What happens to a gas at standard temperature and pressure?
 - C How does a gas react when heated to 100°C?
 - D What happens to a sample of gas at absolute zero?
- 9 Air bags, which act as safety devices in cars, contain solid sodium azide. On impact, the sodium azide releases nitrogen gas, which expands the air bag. The main benefit of using a gas instead of another type of matter is that —
- A gas molecules are subject to ionic bonding
 - B the separation of gas molecules is much greater than the volume they occupy
 - C gases won't explode the bag on very hot days
 - D gas molecules don't transfer excess kinetic energy

