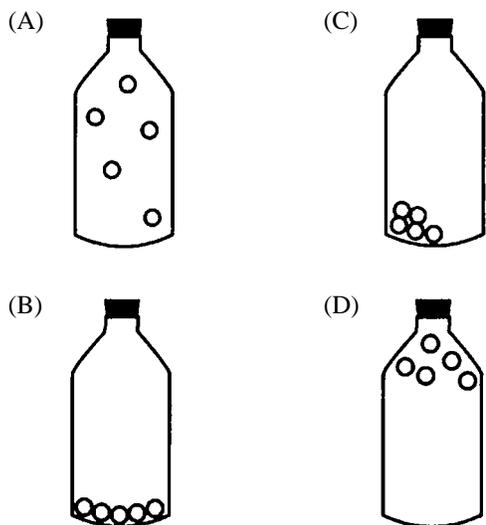


Dalton's Law Problems

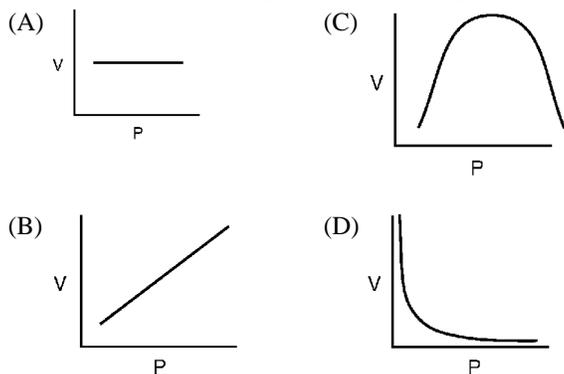
1) Which diagram best represents a gas in a closed container?



2) Which statement correctly describes a sample of gas confined in a sealed container?

- (A) It always has a definite volume, and it takes the shape of the container.
- (B) It takes the shape and the volume of any container in which it is confined.
- (C) It has a crystalline structure.
- (D) It consists of particles arranged in a regular geometric pattern.

3) Which graph best represents the pressure-volume relationship for an ideal gas at constant temperature?



4) A sealed container has 1 mole of helium and 2 moles of nitrogen at 30°C. When the total pressure of the mixture is 60 kPa, what is the partial pressure of the nitrogen?

- (A) 10 kPa
- (B) 20 kPa
- (C) 40 kPa
- (D) 60 kPa

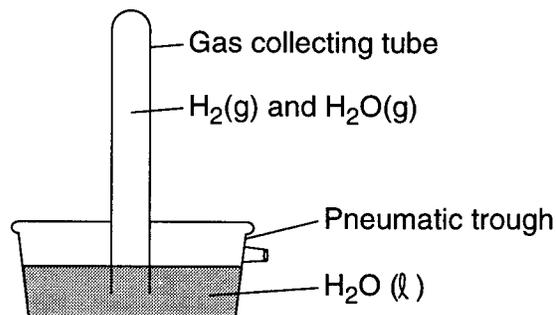
5) A flask contains a mixture of  $N_2(g)$  and  $O_2(g)$  at STP. If the partial pressure exerted by the  $N_2(g)$  is 40.0 kPa, the partial pressure of the  $O_2(g)$  is

- (A) 21.3 kPa
- (B) 37.3 kPa
- (C) 61.3 kPa
- (D) 720 kPa

6) A 300.-milliliter container that is filled with 100. milliliters of oxygen and 200. milliliters of hydrogen has a total pressure of 75 kPa. What is the partial pressure of the oxygen?

- (A) 10 kPa
- (B) 20 kPa
- (C) 25 kPa
- (D) 50 kPa

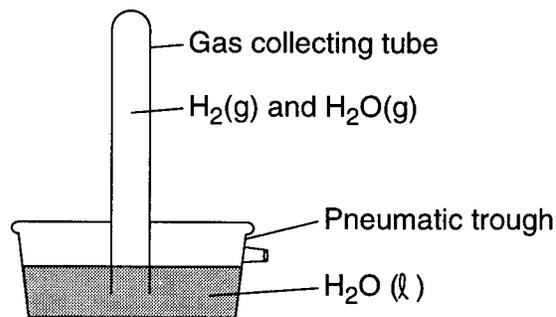
7) The diagram below shows the collection of  $H_2$  gas over water at 25°C. The total pressure in the tube is 760.0 torr. The vapor pressure of water vapor is 23.8 torr at 25°C.



What is the pressure exerted by the hydrogen gas alone?

- (A) 23.8 torr
- (B) 736.2 torr
- (C) 760.0 torr
- (D) 793.8 torr

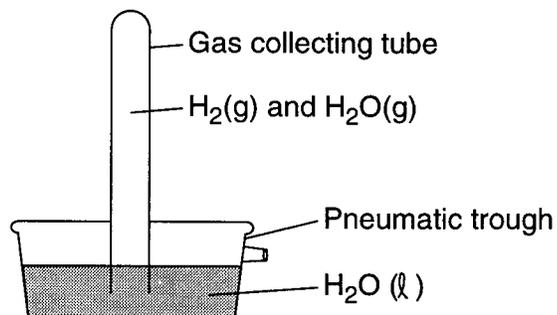
8) The diagram below shows the collection of  $H_2$  gas over water at 30°C. The total pressure in the tube is 752.0 torr. The vapor pressure of water vapor is 31.824 torr at 30°C.



What is the pressure exerted by the hydrogen gas alone?

- (A) 31.8 torr
- (B) 720.2 torr
- (C) 760.0 torr
- (D) 783.8 torr

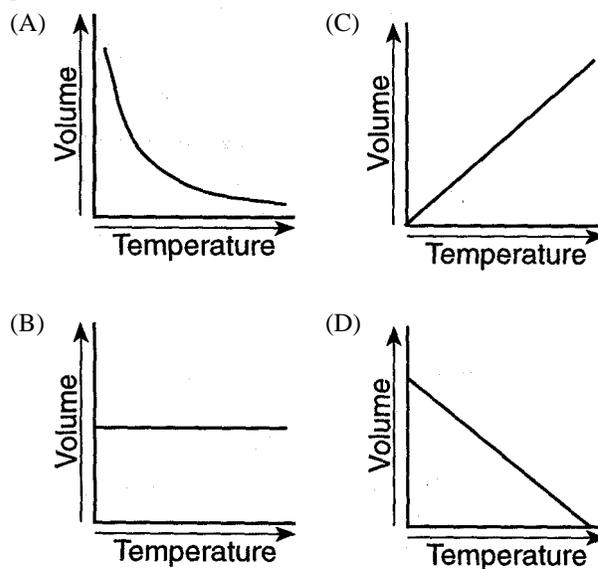
9) The diagram below shows the collection of  $H_2$  gas over water at  $10^\circ C$ . The total pressure in the tube is 767.0 torr. The vapor pressure of water vapor is 9.209 torr at  $10^\circ C$ .



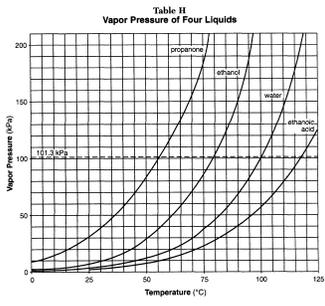
What is the pressure exerted by the hydrogen gas alone?

- (A) 757.8 torr                      (C) 760.0 torr  
(B) 776.2 torr                      (D) 9.209 torr

10) Which graph represents the relationship between volume and Kelvin temperature for an ideal gas at constant pressure?



Reference Tables



## Answer Key

- 1)   A
  - 2)   B
  - 3)   D
  - 4)   C
  - 5)   C
  - 6)   C
  - 7)   B
  - 8)   B
  - 9)   A
  - 10)   C
-