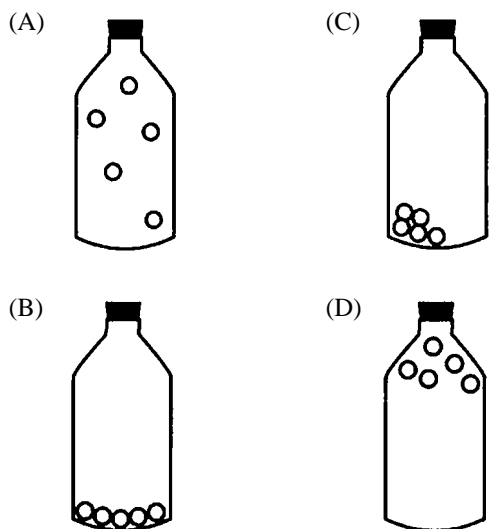


Dalton's Law Problems

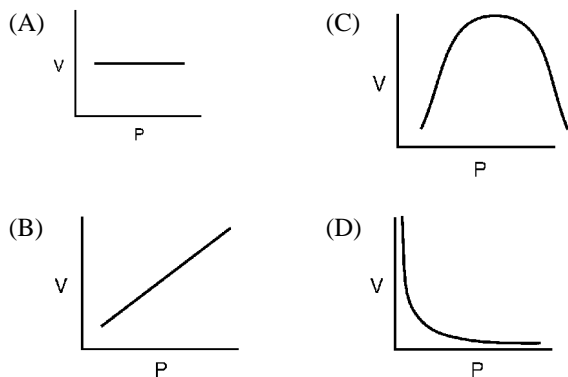
1) Which diagram best represents a gas in a closed container?



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

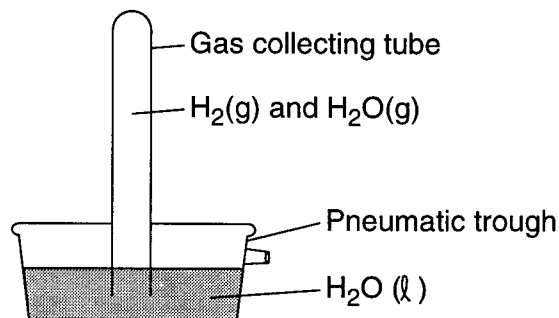
5) A flask contains a mixture of $N_2(g)$ and $O_2(g)$ at STP. If the partial pressure exerted by the $N_2(g)$ is 40.0 kPa, the partial pressure of the $O_2(g)$ is

- (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

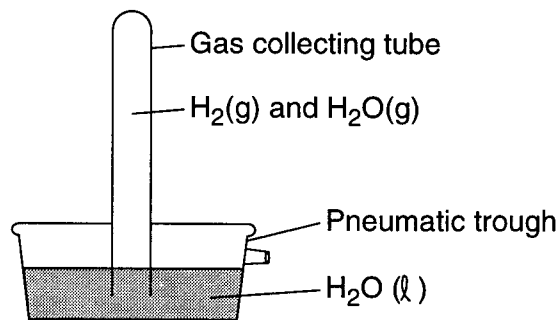
7) The diagram below shows the collection of H_2 gas over water at 25°C. The total pressure in the tube is 760.0 torr. The vapor pressure of water vapor is 23.8 torr at 25°C.



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

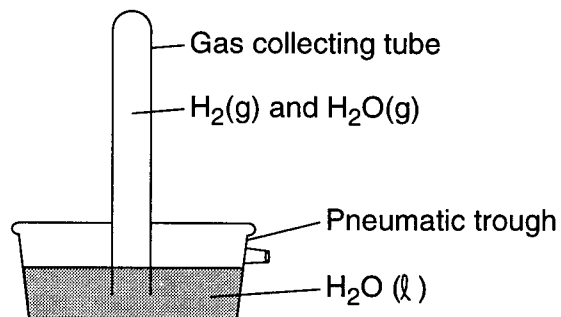
8) The diagram below shows the collection of H_2 gas over water at 30°C. The total pressure in the tube is 752.0 torr. The vapor pressure of water vapor is 31.824 torr at 30°C.



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

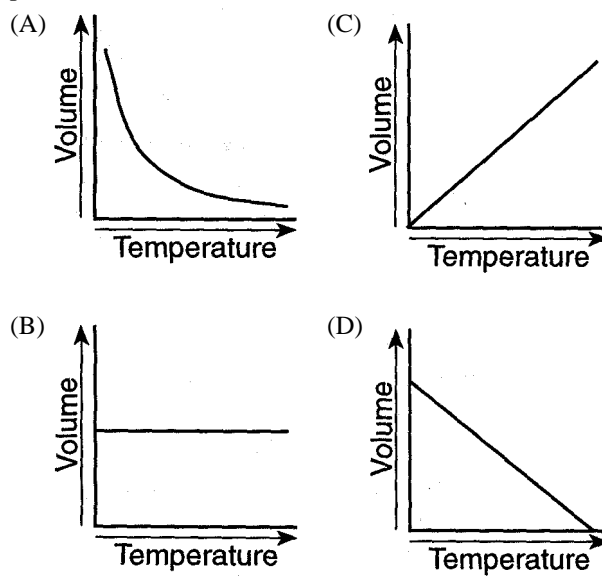
9) The diagram below shows the collection of H_2 gas over water at $10^\circ C$. The total pressure in the tube is 767.0 torr. The vapor pressure of water vapor is 9.209 torr at $10^\circ C$.



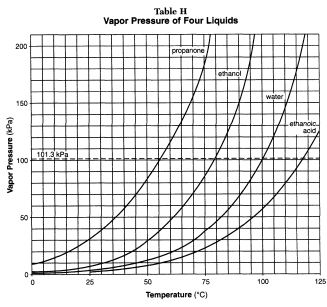
What is the pressure exerted by the hydrogen gas alone?

- (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
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