Warm Up

- Pick up a sticky note with YOUR name
- How do endothermic phase changes affect kinetic energy?
- Name the two endothermic phase changes.

Extra Review Practice

Solids/Liquids/Gases

pg. 407-408:

- 27, 31, 33, 37, 39, 42, 44, 45, 46, 49, 52.

Behavior of Gases

pg 439:

- 39, 41, 43, 46, 47, 49, 53, 55, 67, 69, 72

Gas Law Review

If temperature goes up, then pressure goes_____**up**_____.

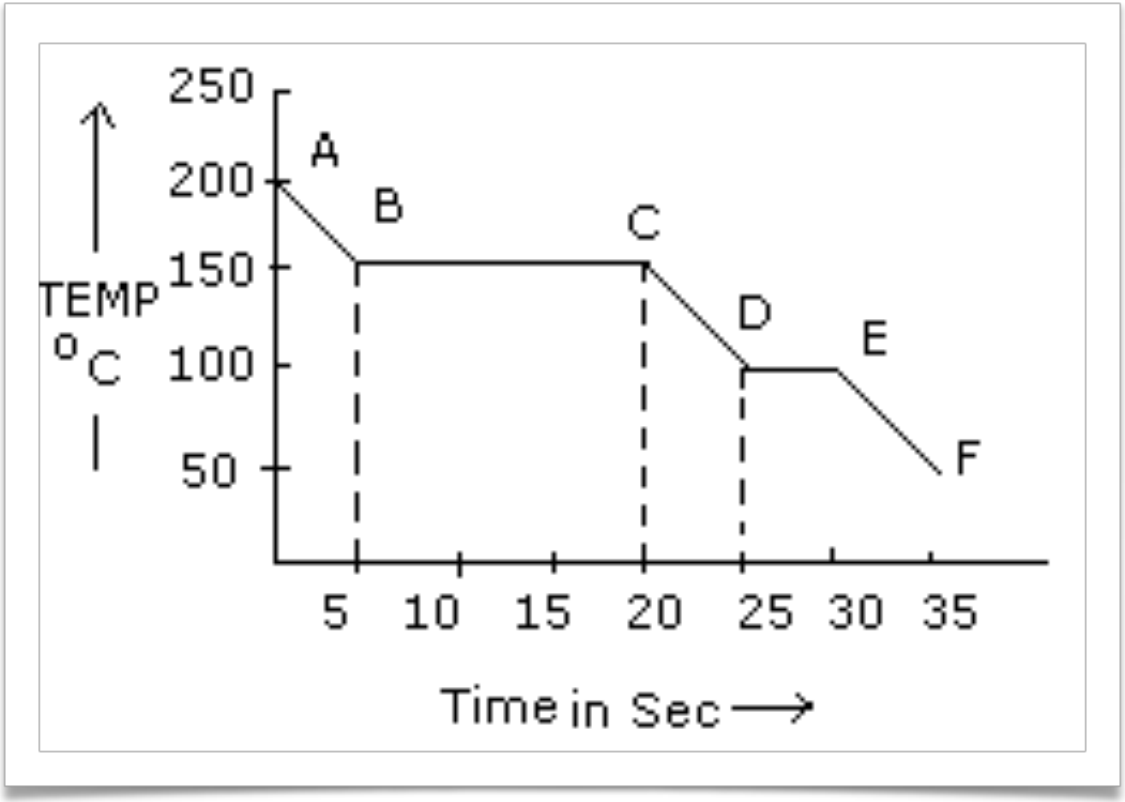
Decreases, Increases, or Stays the Same

As a gas is compressed, the distance between gas molecules **decreases**.

Standard temperature is **0**

degrees Celsius.

What is it called when a substance goes directly from F to A?



Sublimation

10

Decreases, Increases, or Stays the Same

As a gas is compressed, the number of gas molecules **stays the same**.

Decreases, Increases, or Stays the Same

As a gas is compressed, the pressure

__**increases**__.

Decreases, Increases, or Stays the Same

As a gas is compressed, density

increases.

Decreases, Increases, or Stays the Same

As a gas is compressed, the mass

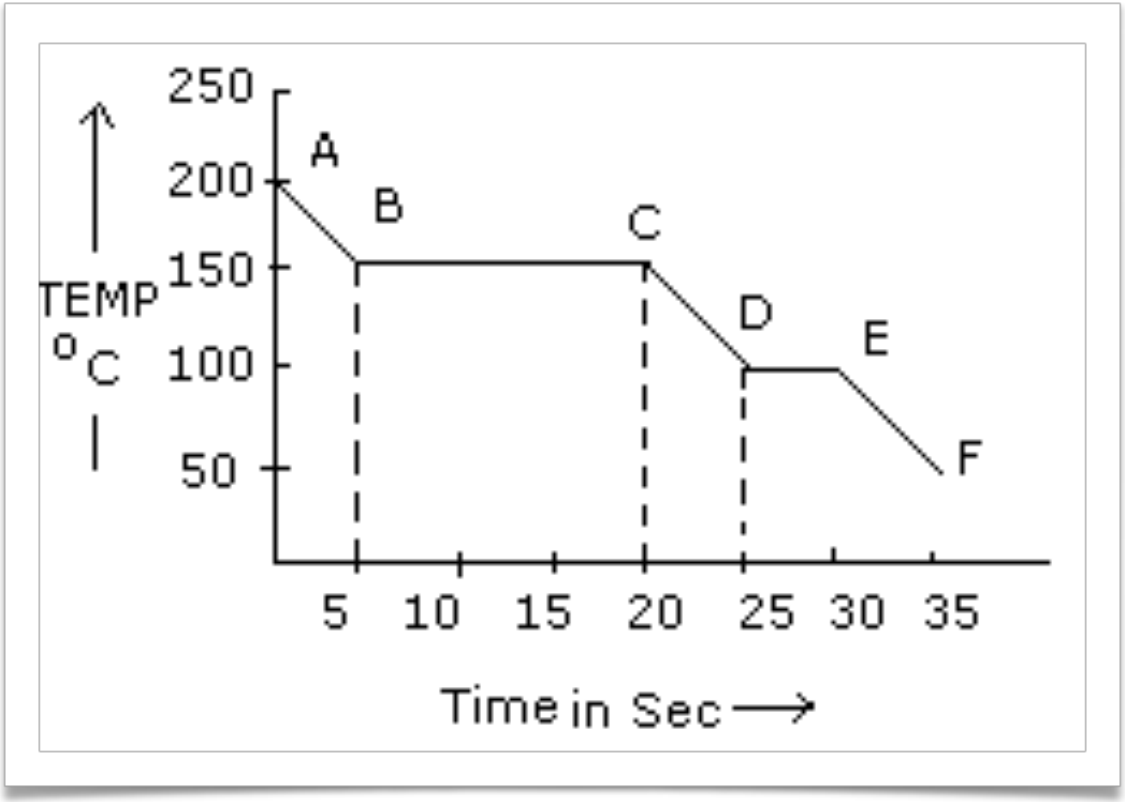
stays the same.

More collisions on the wall of the container causes more **pressure**.

Temperature is the measure of

kinetic energy.

Point D represents the **freezing point** ?



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Decreases, Increases, or Stays the Same

If volume is decreased, then the pressure **increases**.

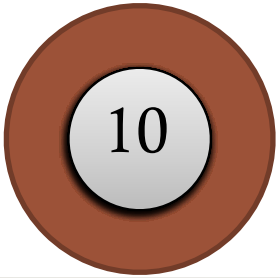
To change from Celsius to Kelvin,

add 273.

True or False and WHY?

The ideal gas equation will only give correct values if the temperature is expressed in degrees Celsius.

FALSE, temp. in Kelvins



Standard pressure is **1** atm

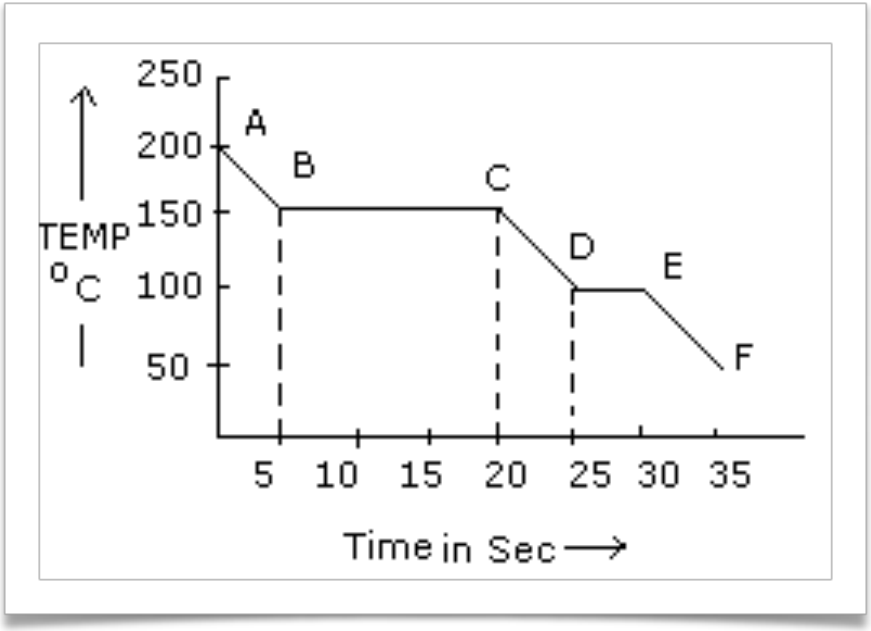
Rearrange equation for unknown variable

- If I have 4 moles of a gas at a pressure of 5.6 atm and a volume of 12 liters, what is the temperature?

$$T = \frac{VP}{nR}$$

If the pressure of 2 L of a gas at STP doubles, its new volume would be

1 L



Moving from A to

F kinetic energy

decreases.

10

If the Kelvin temperature of a sample of 2L of gas at STP doubles, the new volume is **4L**.

Rearrange equation for unknown variable

If I initially have a gas at a pressure of 12 atm, a volume of 23 liters, and a temperature of 200 K, and then I raise the pressure to 14 atm and increase the temperature to 300 K, what is the new volume of the gas?

$$V_2 = \frac{P_1 V_1 T_2}{T_1 P_2}$$

Decreases, Increases, or Stays the Same

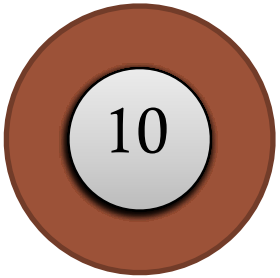
As a gas is compressed, the volume

decreases .

True or False and WHY?

As more gas particles are added to a container, there are fewer collisions because the particles don't go as far.

FALSE, there are more collisions because there are more molecules to hit the side of the container.



Which one-P,V, n, or T?

Kilopascals (kPa)

Pressure

Solve Unknown

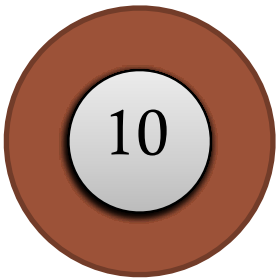
If I initially have a gas at a pressure of 12 atm, a volume of 23 liters, and a temperature of 200 K, and then I raise the pressure to 14 atm and increase the temperature to 300 K, what is the new volume of the gas?

29.6 L

True or False and WHY?

At a constant temperature, the pressure exerted by one mole of a gas decreases if the volume increases.

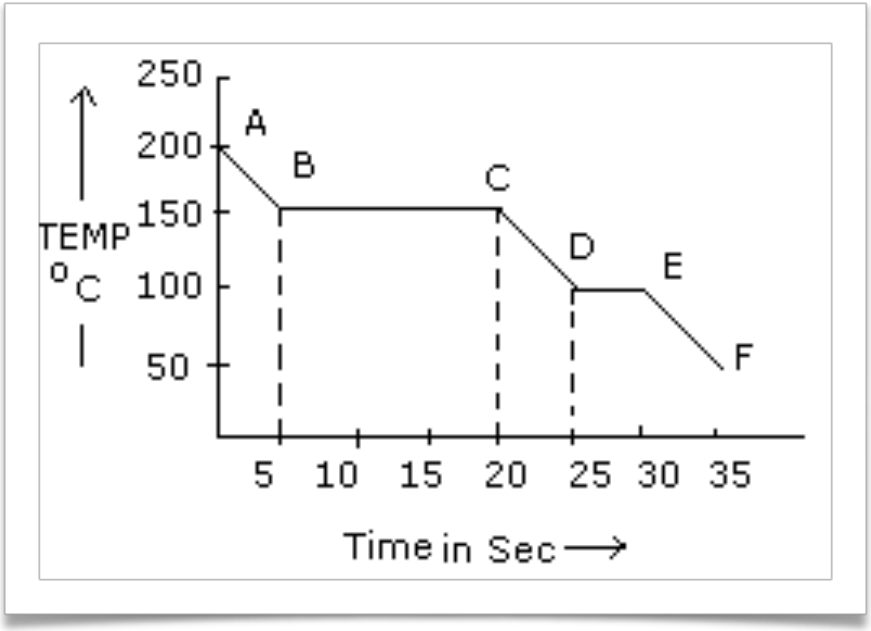
TRUE, P and V are inversely proportional.



Which one-P,V, n, or T?

Atm

Pressure



Moving from D to B kinetic energy **increases**.

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Rearrange equation for unknown variable

If I have 4 moles of a gas at a pressure of 5.6 atm and a volume of 12 liters, what is the temperature?

$$T = \frac{PV}{nR}$$

Which one-P,V, n, or T?

Moles

n

Solve Unknown

If I have an unknown quantity of gas at a pressure of 1.2 atm, a volume of 31 liters, and a temperature of 87 ^{0}C, how many moles of gas do I have?

1.26 moles

Which one-P,V, n, or T?

mL

Volume

Solve Unknown

If I contain 3 moles of gas in a container with a volume of 60 liters and at a temperature of 400 K, what is the pressure inside the container?

1.64 atm

Which one-P,V, n, or T?

Grams

n - must use molar mass to convert to moles

Which one-P,V, n, or T?

^{o}C

T - change to Kelvin

Solve Unknown

If I have 4 moles of a gas at a pressure of 5.6 atm and a volume of 12 liters, what is the temperature?

205 K

Solve Unknown

If I have 0.275 moles of gas at a temperature of 75 K and a pressure of 1.75 atmospheres, what is the volume of the gas?

0.97 L

Gas Law Review