

1

What happens when the particles of a gas are compressed?

2

If a gas is compressed from 4 L to 1 L while the temperature remains constant, what happens to the pressure?

3

Why is only Kelvin used in the combined gas law?

4

Why do aerosol containers have the warning: "DO NOT INCINERATE" on them?

5

Write the Combined Gas Law formula

6

What is STP?

7

Do ideal gases have any particle mass, or any attraction between particles?
Can they ever become liquids?

8

The formula $P_1V_1 = P_2V_2$ has what sort of proportionality...
Direct or Inverse?

9

What is Diatomic?

3

Temperatures must always be positive. Zeros + negative numbers wreck the math.

2

This increases collisions, so pressure increases

1

As gases are compressed there are more collisions, leading to increased pressure

6

Standard Pressure is 1 atm or 101.3 kPa
Standard Temperature is 273K or 0°C

5

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

4

Heat from fire can cause the containers to explode because increased temp. results in increased pressures.

9

Seven elements only come in pairs when PURE.
They are known as the HONCIBrIF Twins.

8

This formula shows Inversely Proportional

7

Ideal gases are not real. They have no particle mass, no attraction or repulsion & can never become liquids or solids.

10

What are the Halogens?

11

How many grams in
4 moles of helium?

12

What are Noble Gases?

14

How many liters in
1 mole
of gas at STP?

15

What is absolute zero?

16

What are real gases?

17

How many molecules
are in 22.4 L of
carbon monoxide at STP?

18

How many mL are in 1 liter?
How many mL are in 2.4 liters?

19

What units can be used for
pressure using the
Combined Gas Law?

12

The Noble Gases are in
Group 18
They are
He, Ne, Ar, Kr, Xe, Rn

11

The molar mass
of He is 4 g/mole
4 moles He = 16 grams.

10

The Halogens are the
elements in Group 17
They are
F, Cl, Br, I, At

16

All gases are real. Ideal gases
are used to discuss theory
of gases. Examples of
real gases include
O₂, H₂, He, O₃ and CO₂

15

Absolute Zero is
0 Kelvin or -273°C
all molecular motion stops
(it's actually 273.15°C)

14

1 mole gas at STP is
always 22.4 Liters.
Always!

19

Any units for pressure can
be used, kPa, atm or mm of Hg
even psi. As long as they stay
the same, so they cancel out.

18

1000 mL in 1 liter,
2400 mL in 2.4 liters.

17

22.4 L of any gas at STP
is 1 mole of gas.
6.02 × 10²³ molecules
Are in 1 mole of any gas

20

What units can be used
for volume with the
Combined Gas Law?

21

How many moles is 84 grams
of krypton gas?

22

Pressure + Volume are
_____ proportional.

23

Pressure + Temperature are
_____ proportional.

24

Volume + Temperature are
_____ proportional.

25

Pressure X Volume always
equals a _____.

26

Write the formula for
gas math with
Constant Pressure.

27

Write the formula for
gas math with
Constant Temperature.

28

Write the formula for
gas math with
Constant Volume.

22

Pressure and volume are
inversely proportional.

21

Krypton is 84 g/mole,
so it's just one mole.

20

Any units as long as they
are the same on both sides
of the equation.
(so they cancel out)
ex: L, mL, cm³

25

Pressure X Volume always
equals a CONSTANT.

24

Volume and temperature are
DIRECTLY proportional.

23

Pressure + Temperature are
DIRECTLY proportional.

28

with Constant Volume
use this formula

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

27

with Constant Temperature
use this formula:

$$P_1V_1 = P_2V_2$$

26

with Constant Pressure
use this formula

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