What happens when the particles of a gas are compressed?

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?

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? -

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.

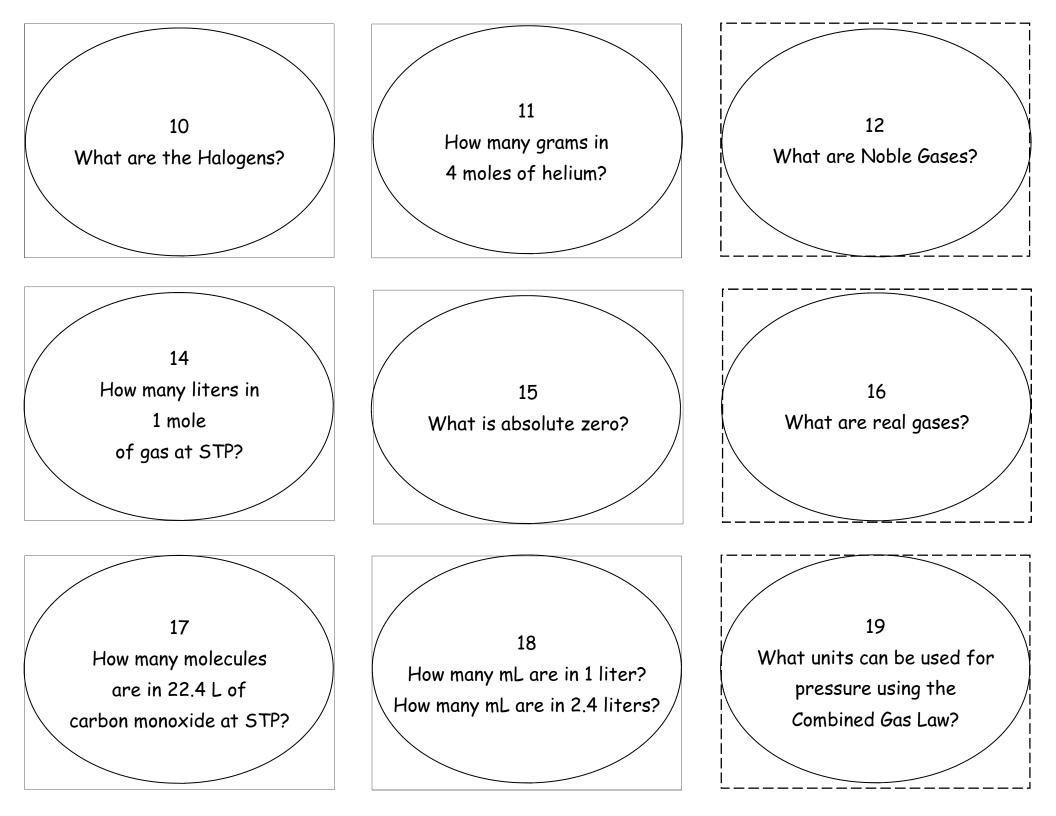
8

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.



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 O_2 , H_2 , He, O_3 and CO_2

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!

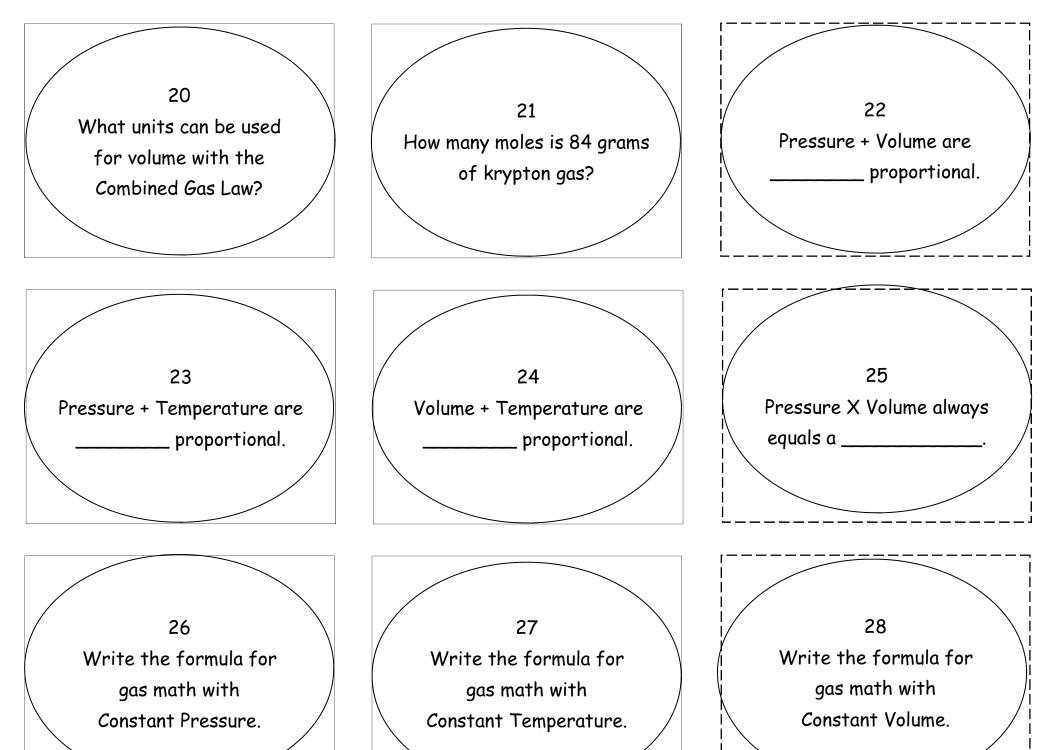
19

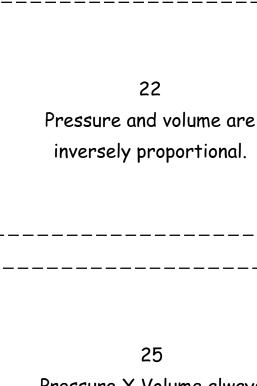
Any units for pressure can be used, kPa, atm or mm of Hg even psi. As long as they stay the same, so they cancel out. 18

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. 6.02×10^{23} molecules

Are in 1 mole of any gas





25
Pressure X Volume always equals a CONSTANT.

Volume and temperature are DIRECTLY proportional.

23
Pressure + Temperature are
DIRECTLY proportional.

28
with Constant Volume
use this formula

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

with Constant Temperature use this formula:

$$P_1V_1 = P_2V_2$$

26 with Constant Pressure use this formula

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