

Q1.(2020)

a)

- record the initial volume of air
- record the initial pressure
- push the plunger of the syringe
- to decrease the volume of air
- read the new value on the pressure gauge
- record the new value of the volume
- repeat for different volumes

b)

(when the volume is halved) the pressure doubles

c)

kinetic energy

speed

Q2.(2021)

a)

0 to 25 cm³

b)

temperature

c)

$$101\,000 \times 12 = \text{constant}$$

$$\text{constant} = 1\,212\,000 \text{ (Pa cm}^3\text{)}$$

d)

$$p \times 24 = 1\,212\,000$$

$$p = \frac{1\,212\,000}{24}$$

$$p = 50\,500 \text{ (Pa)}$$

e)

there is more space between
the gas particles

Q3.(2023)

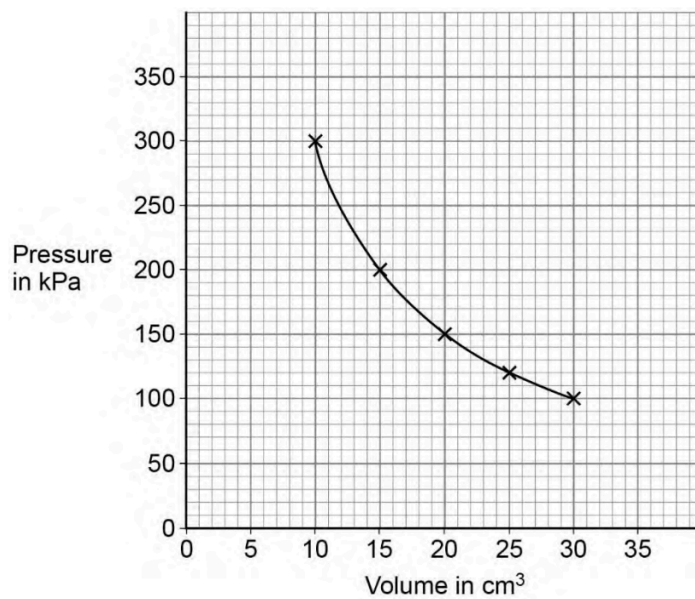
a)

random directions

b)

a range of speeds

c)



d)

$$300 \times 10 = \text{constant}$$

$$\text{constant} = 3000$$

e)

Quantity	Decreases	Stays the same	Increases
Mean time between collisions of the particles with the tube			✓
Mean distance between the particles			✓
Mean speed of the particles		✓	

Q4.(2024)

a)

the volume decreased

b)

the distance decreased

c)

the frequency of collisions increased

d)

the air pressure increased

e)

the mean speed of the particles increases

f)

$$0.0130 = 2.60 \times 10^{-8} \times 1010 \times \Delta\theta$$

$$\Delta\theta = \frac{0.0130}{(2.60 \times 10^{-8} \times 1010)}$$

$$\Delta\theta = 495 (^{\circ}\text{C})$$