

The _____ X _____ = a constant for a sample of gas

A sample of chlorine gas is at a pressure of 176.5 kPa. The volume of the gas is 1.350 Liters. Calculate the constant for this sample of gas? (pay attention to units)

_____ X _____ = _____

Using this PV=Constant concept, if the pressure of this sample of chlorine is changed twelve times (as shown in the table below), calculate how the volume changes each time. Write the formula and show work for the first 5 calculations only. Fill in the Volume column. Produce a large, perfect graph of the data, Pressure as a function of Volume.

Draw a BEST FIT curved line (do not just connect the dots). Give the graph a descriptive title, and mark clearly that this is an "inversely proportional" graph.

Pressure (kPa)	Volume (Liters)
350.	
320.	
290.	
230.	
200.	
170.	
140.	
110.	
70.0	
55.0	
45.0	

Scoring on this classwork assignment

- Math with formulas and units, for the first 5 calculations = 2 points
- Descriptive title for the Graph = 2 points
- Two good scales for X and Y on the graph, making it big and even. = 2 point
- One smooth, curved, best fit line on the graph = 2 points
- One sentence explaining that this graph is NOT directly proportional (see front) = 2 points
- The Big Five Questions below, 2 points each = 10 points
- Total possible = 20 points

The Big 5 Questions - Write question + your answer (not multiple choice)

1. Why draw a best fit curved line instead of just connecting the dots?
A. It's prettier B. It connects ALL the P x V values that equal all of the other ones
C. It covers up your errors in plotting the points D. Straight lines are only for geometric graphs
2. When pressure is increased, volume must decrease. A. Because P + V are directly proportional
B. Because P + V are inversely proportional. C. Because both variables move in the same direction
D. Because when the Kelvin Temp varies, anything is possible.
3. When temperature increases, volume also increases. A. Because T + V are directly proportional.
B. Because T + V are inversely proportional. C. Because both variables move in opposite directions
D. Because when ever you use standard pressure, temperature increases affect volume in an odd way.
4. When doing any sorts of gas math with temperature involved, why do we only use Kelvin and not the other scales?
A. Kelvin is the absolute truth, the whole truth and nothing but the truth
B. Kelvin never runs into significant figure complications.
C. Kelvin never has a negative number (or a zero temp)
D. Kelvin is the only metric temperature unit we have to use
5. It is true in Vestal area that temperature outdoors is in an inverse relationship with the mass of clothing worn by adults. Draw a small graph with the title: "Mass of clothing worn as a function of daily average temperature". Put in axis labels (actual units are not necessary). Make the graph line properly.