Problem 1

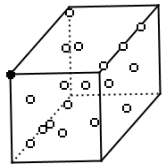
Gas Laws Activities

What is the relationship between volume and pressure when the temperature and the moles of gas are held constant?

In the following activity this relationship will be discovered.

atm_pressure=~~0.2~~ 1 cm

volume=15.6344
Pressure=1.27923



1. Grab corner point P and strech and shrink the box.
2. Observe the relationship between each of the gas molecules.
3. Observe the

Question

What happens to the molecules of gas as the box expands?

Answer

Question

What happens to the pressure as the as the volume gets greater? (you may go back and explore the situation.)

Answer

Question

If pressure is defined as the number of collisions a gas paricles have on the sides of the container. What situation should create the greatest pressure?

Answer

The following page is the data captured from the expansion and contraction of the box. By graphing this data we can determine the relationship between volume and pressure.

Move to the next page to observe the data. After look ing the data over move to the graphing window.

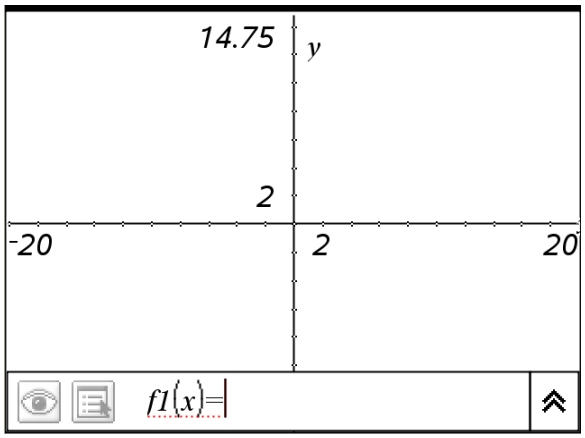
	A vol	B press	C	D	E
◆	=capture	=capture(			
1	15.63...	1.27923			
2					
3					
4					
5					
6					

A1 =15.63437593744

1. On the following page select the x variable and set it to vol. Set the y variable to press.

2. From the window menu select Zoom – Data.

Observe the shape of the curve.



0/99

Determine the regression model that best fits the data.

1. From the Stats menu select Power Regression.

2. For Xlist enter

Record the equation below using the variables P for pressure and V for Volume.

Equation?

Boyle's Law states the pressure and the volume are inversely related as one increases the other decreases. The product of the pressure and volume should equal a constant value.

Question

Was the product of your volume and pressure equal to a constant value? Give three examples using your data.

Answer