| | |
|---|---|
| c1.State the Law of Conservation of Mass | 5 Convert each of the following to an empirical formula:<br><br>$$P_3O_6$$<br>$$P_3O_3$$<br>$$C_2H_{10}O_4$$<br>$$C_{12}H_{24}$$ |
| *2.Draw a simple graph, with no numbers, that shows Pressure vs Volume* | 6 If some substance had a density of 4.38 g/cm$^3$ what would be the mass of 838 grams of that substance? |
| **3 Draw a simple graph, with no numbers, that shows Pressure vs Temperature** | 7 Kelvins, Celsius, and Fahrenheit. Of these, which will double in magnitude when the kinetic energy of a substance doubles? |
| 4 When temperature decreases, what happens to pressure? When volume increases, what happens to pressure? | 8 Write standard pressure in three or more different units. |
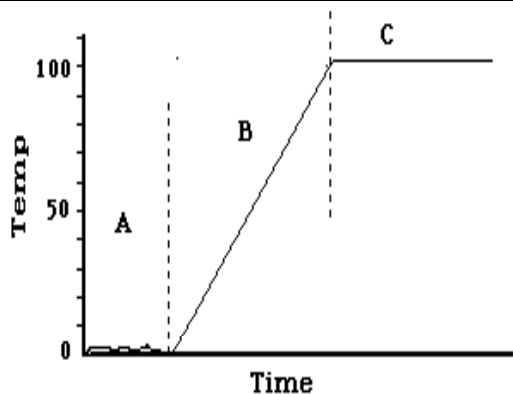
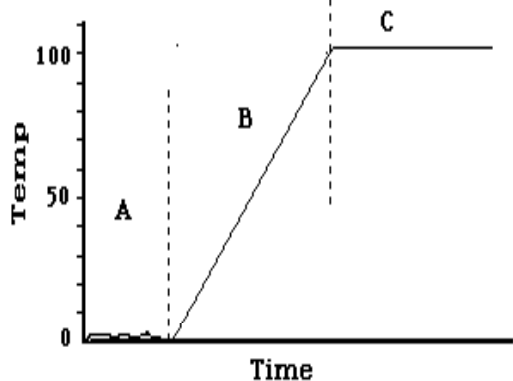9 This graph shows the temperature of a substance being held over a flame. What is happening to $E_{ph}$ at

A _____

B _____
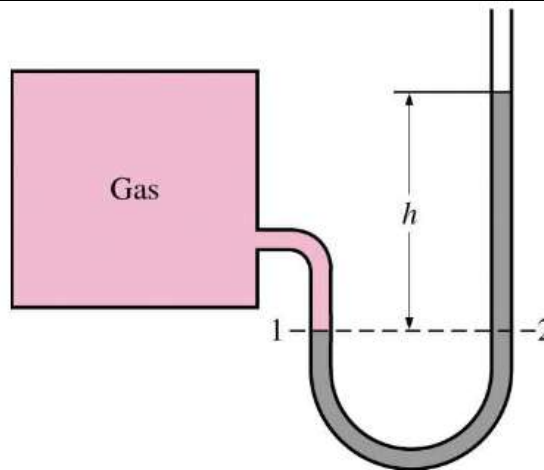


10 List three things that could happen to the Gas in the box that would cause the distance h to decrease



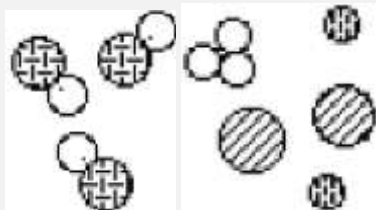11 This graph shows the temperature of a substance being held over a flame. What is happening to $E_{th}$ at

A _____

B _____

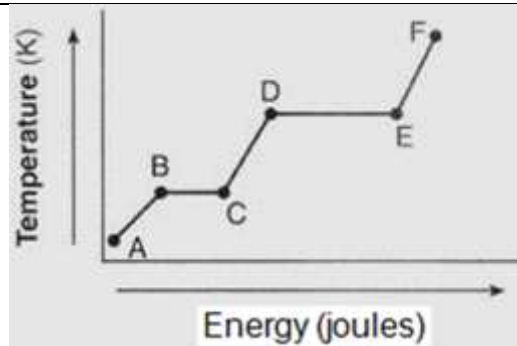12 Convert the following to "normal" numbers (with no exponents anywhere)

1. $7.2 \times 10^{-2}$
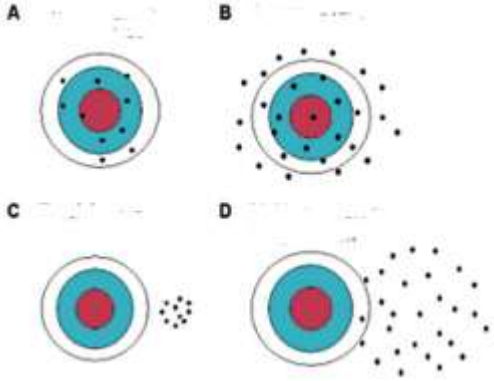
2. $4.391 \times 10^{4}$



13 On your sheet copy from above the following:

Compounds: _____

Elements: _____



Energy (joules)    14

Which segments represent Solid, Liquid, and Gas?

| | |
|---|---|
| 15   What is the mass of 1 mole of $CO_2$? | <br>18   Sketch these and then label what they are called. . |
| 16  How many atoms of neon are there in 1/2 a mole of neon? | **19  List the three forms that energy can be stored (they all have a capitol E).**<br>**List the three ways energy can be transferred.** |
| 17  What is the formula for calculating the heat that enters or leaves water.<br><br>In what four units can we measure heat? | 20  Which two conversions are NOT correct?<br><br>1000 calories = 1 Calorie<br>absolut = 0°C<br>$6.02 \times 10^{23}$ moles = 1 atom<br>12.01 grams C =  $6.02 \times 10^{23}$ atoms C |

| | |
|---|---|
| 21  Round each to three significant figures<br><br>23409<br><br>$3.4451 \times 10^{15}$ | <br>22<br>Which two show the best accuracy?<br>Whichtwo show the best precision? |
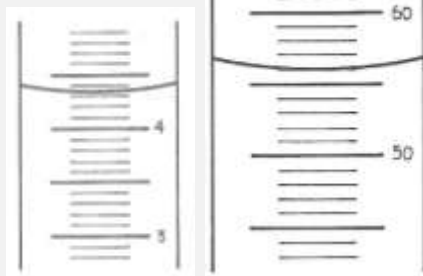
23 these two liquid volumes to the correct number of significant figures.

Read
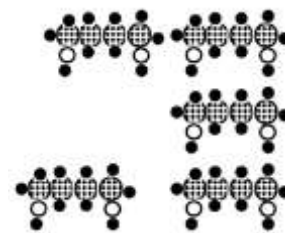


24 How many moles of molecules are in this box?

25 How many oxygen atoms are in $Al_2(CO_3)_3$?

26 What will be the new volume if 250 mL of gas at STP changes to 4.0 atmospheres pressure and 30°C temperature?

27 A chemist took a mysterious orange liquid and carefully cooled it and got the following temperature readings in degrees Celsius: 20, 15, 10, 0, -5, -7, -7, -7, -7, -10, -15.

What has she discovered? Boiling Point? Melting Point? Density?
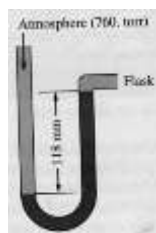


28 Find the pressure inside the flask.