**Dougherty Valley HS AP Chemistry**

**WORKSHEET #5\***

**Gas Laws – Extra Gas Law Practice**

Name: Date: Period: Seat #:

**Directions**: Any worksheet that is labeled with an \* means it is suggested extra practice. We do not always have time to assign every possible worksheet that would be good practice for you to do. You can do this worksheet when you have extra time, when you finish something early, or to help you study for a quiz or a test. If and when you choose to do this Extra Practice worksheet, please do the work on binder paper. You will include this paper stapled into your Rainbow Packet when you turn it in, even if you didn’t do any of this. We want to make sure we keep it where it belongs so you can do it later if you want to (or need to). If you did the work on binder paper you can include that in your Rainbow Packet after this worksheet. If we end up with extra class time then portions of this may turn into required work. If that happens you will be told which problems are turned into required. Remember there is tons of other extra practice on the class website…and the entire internet! See me if you need help finding practice on a topic you are struggling with.

$$P\_{1}x V\_{1}= P\_{2} x V\_{2 }; \frac{P\_{1}V\_{1}}{T\_{1}}= \frac{P\_{2}V\_{2}}{T\_{2}}; K=℃+273$$

|  |  |
| --- | --- |
| **Boyle’s Law** | **Charles’s Law** |
| A sample of hydrogen at 1.50 atm had its pressure decreased to 0.50 atm producing a new volume of 750 mL. What was the sample’s original volume? 250. mL | Fluorine gas at 300 K occupies a volume of 500 mL. To what temperature should it be lowered to bringthe volume to 300 mL? 180 K |
| Chlorine gas occupies a volume of 1.20 liters at 720 torr pressure. What volume will it occupy at 1 atmpressure? 1.14 L | Helium occupies a volume of 3.80 Liters at –45°C. What volume will it occupy at 45°C? 5.30 L |
| Fluorine gas exerts a pressure of 900 torr. When the pressure is changed to 1.50 atm, its volume is 250mL. What was the original volume? 317 ml | A sample of argon gas is cooled and its volume went from 380 mL to 250 mL. If its final temperature was –55°C, what was its original temperature? 331 K / 58.°C |

**Complete the following chart. Show your work**.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **P1** | **V1** | **T1** | **P2** | **V2** | **T2** |
| 1 | 650. torr |  | 100.0° | 900. torr | 225. L | 150.0°C |
|  |
| 2 | 850. mmHg | 1.50 L | 15.0°C |  | 2.50 mL | 30.0°C |
|  |
| 3 | 125. kPa | 125. L |  | 100.1 kPa | 100. mL | 75°C |
|  |