Gas Law wksht – BOYLE'S, CHARLES', GAY-LUSSAC'S AND COMBINED GAS   Name _____

Section 1: For the following problems, assume that the temperature remains constant.

1. If 259 cm^3 of oxygen gas at 112 kPa is compressed to 101.3 kPa, what volume would it occupy?
2. 99.3 kPa of gas was measured at 455 cm^3. What will the volume be if the pressure is adjusted to 202.6 kPa?
3. As the volume of a gas is changed from 62.4 cm^3 to 47.3cm^3, what will the final pressure be if the initial was 117 kPa?
4. If 74.5 m^3 of oxygen is collected at a pressure of 98.0 kPa, what volume will the gas occupy if the pressure is changed to 90.4 kPa?

Section 2: Find the new volume of gases when the temperature changes from that indicated to <u>standard temperature</u> (P is constant).

1. 907 cm^3 at 19^{0}C
2. 3.44 m^3 at 37^{0}C
3. 50.2 cm^3 at -53.0^{0}C
4. 76.1 cm^3 at 167^0 C

Section 3: Find the new volume of gases when the temperature changes to the value indicated (P is constant).

1. 6.67 m^3 at 10^0 C to 43^{0}C
2. 488 cm^3 at 27^{0}C to -27^{0}C

Section 4: Find the new volumes of the following gases when the conditions change as indicated.

1. 51.7 cm^3 at 27^{0}C and 90.0 kPa to STP
2. 14.6 m^3 at -12^{0}C and 78.6 kPa to 35^{0}C and 107 kPa
3. 67.4 cm^3 at 76^{0}C and 125.4 kPa to STP
4. 20.2 cm^3 at 42^{0}C and 112.0 kPa to 25^{0}C and 80.0 kPa