

1. a)  $K = ^\circ C + 273$

2. Convert: a)  $25 ^\circ C$  to K: \_\_\_\_\_

b)  $100 ^\circ C$  to K: 373

3. The volume of a gas is directly / indirectly proportional to its Kelvin temperature.  
(Circle correct answer).4. If you decrease the temperature of a gas, its volume will increase / decrease.  
(Circle correct answer).5. What is the equation used for solving Charles Law problems?  $\frac{V_1}{T_1} = \frac{V_2}{T_2}$ 6. In gas law problems, what units must be used for temperature? K7. A sample of gas has a volume of 2.5 L at a temperature of  $20 ^\circ C$ .What will the volume be if the temperature is increased to  $100 ^\circ C$ ?

$V_1 = 2.5 L$

$T_1 = 20 + 273 = 293$

$V_2 = ?$

$T_2 = 373$

$\frac{2.5 L}{293 K} = \frac{V_2}{373 K}$

$(2.5)(373) = V_2(293)$

$3.2 L = V_2$

8. A gas has a volume of 5.0 L at a temperature of 250 K.

What temperature would increase the volume to 7.0 L?

$V_1 = 5 L$

$T_1 = 250$

$V_2 = 7 L$

$T_2 = ?$

$\frac{5 L}{250 K} = \frac{7 L}{T_2}$

$T_2(5 L) = (250 K)(7 L)$

$T_2 = 350 K$

9. A gas has a volume of 12 L at  $10.0 ^\circ C$ . What volume will the gas have at a temperature of  $130 ^\circ C$ ?

$\frac{12 L}{283 K} = \frac{V_2}{403 K}$

$(12 L)(403 K) = (283 K)V_2$

$V_2 = 17.1 L$

10. A sample of gas has a volume of 25 L at a temperature of 400 K. A) At what Kelvin temperature will the gas have a volume of 20 L?

$\frac{25 L}{400 K} = \frac{20 L}{T_2}$

$T_2 = 320 K$

$T_2(25 L) = (20 L)(400 K)$