NAME KEY

Gases Take Home Review Quiz

CREATE A DATA BOX, SHOW YOUR WORK, CIRCLE YOUR ANSWERS
ALSO, ON THE LINE FOLLOWING EACH PROBLEM, WRITE THE NAME OF GAS LAW USED TO SOLVE EACH PROBLEM.

1) A container of gas contains 35 mL of gas at a pressure of 1.0 atm. If the container is expanded such that the new volume of the container is 75 mL, what will be the new pressure of the gas inside.
GAS LAW USED: BOYLE'S LAW

.467atm

2) Your favorite balloon has a volume of 25 liters at STP. You release the balloon and it rises to an altitude where the pressure is 52 kPa, and the temperature is -23°C. What will be the new volume of your balloon?
GAS LAW USED: COMBINED GAS LAW

44.6L

3) The gas inside of an aerosol can is at a pressure of 1350 torr and a temperature of 20°C. The can contains a warning stating that if the contents of the can experience a pressure of greater than 2500 torr, the can will explode. If you heat the can to a temperature of 300°C, will the can explode?
GAS LAW USED: GAY LUSSAC

2640 torr

YES IT WILL EXPLODE

4) Johnny performed a lab in which he collected 0.57 grams of butane gas (C_4H_{10}). The gas had a volume of 125 mL and was collected at a pressure of 750 torr. What was the temperature of the gas which Johnny collected? Give your answer in K and in °C.

GAS LAW USED: IDEAL GAS LAW

152.95K
or
-120.05°C

5) You collect 0.500 grams of an unknown gas at a temperature of 20 °C and a pressure of 1.0 atm. The volume of this gas is 273 mL. Determine the molar mass of the unknown gas. Of the following choices, determine the identity of this gas:

NO_2 CO_2 O_2 Cl_2O

GAS LAW USED: IDEAL GAS LAW

44g/mol
CO_2

6) The atmosphere on a mountain top contains oxygen gas at a pressure of 115 mmHg, nitrogen gas at a pressure of 475 mmHg, and carbon dioxide gas at a pressure of 2 mmHg. What is the total pressure of the atmosphere? Express your answer in mmHg and in atm.

GAS LAW USED: DALTON'S LAW OF PARTIAL PRESSURE

592 mmHg
or
.7790 atm