**Ideal Gas Law Fun!**

1) I’m going to take an empty water bottle on an airplane, for some reason. If, at cruising altitude, the bottle contains 0.050 moles of air at a temperature of 288 K and a volume of 0.50 L, what will the pressure inside the bottle be? R = 0.08206 Latm/molK.

**20.1 atm**

2) If I filled the same type of water bottle to the very top with water, what would the pressure be under the same conditions as above? Explain your answer.

3) When the temperature is very hot outside, the atmosphere gets bigger than when it is cold (seriously, look it up). Given this information, why don’t our houses get crushed by increasing pressure when the temperature increases?

4) My oven has a volume of 300 L. If I am cooking a pan of delicious pizza rolls at a pressure of 1.00 atm, and the oven has a cooking temperature of 491 K, how many moles of air are in the oven? R = 0.08206 Latm/molK.

**0.74 moles**

5) How many moles of air are in the oven in #4 after the temperature decreases to a normal 300 K?

**0.64 moles**