

# ANSWERS

A sample of ethane gas that is 70 mL has a pressure of 325 torr. If the volume is changed to 100 mL, what will happen to the pressure?

**Step One:** Check one answer about the pressure in the above problem

- pressure will decrease *[larger volume so less collisions and therefore less pressure]*  
 pressure will increase

**Step Two:** Solve below using dimensional analysis. Choose words before numbers. The solution will be one step.

$$325 \text{ torr} \times \left( \frac{70 \text{ mL}}{100 \text{ mL}} \right) = 227.5 \text{ torr}$$

Solved by (signature):

*Genest*

A quantity of gas exerts a pressure of 634 kPa at a temperature of 22.0 °C. If the volume remains unchanged, what pressure will it exert at -8.0 °C? Remember to convert temperatures into kelvins first!

**Step One:** Check one answer about the pressure in the above problem

- pressure will decrease *(colder)*  
 pressure will increase

**Step Two:** Solve below using dimensional analysis. Choose words before numbers. The solution will be one step.

$$634 \text{ kPa} \times \left( \frac{265 \text{ K}}{295 \text{ K}} \right) = 570 \text{ kPa}$$

Solved by (signature):

*Genest*

A gas with a volume of 8.0 L at a pressure of 0.85 atm is allowed to expand until the volume is 17.00 L. What is the new pressure?

**Step One:** Check one answer about the pressure in the above problem

- pressure will decrease *because of larger volume, less wall collisions*  
 pressure will increase

**Step Two:** Solve below using dimensional analysis. Choose words before numbers. The solution will be one step.

$$0.85 \text{ atm} \times \left( \frac{8.0 \text{ L}}{17.00 \text{ L}} \right) = 0.4 \text{ atm}$$

Solved by (signature):

*Genest*



Worth 5 points Homework Credit.  
No credit if not worked with your assigned partner.

Name \_\_\_\_\_

Name \_\_\_\_\_

The pressure in an automobile tire is 6.0 atm and the tire contains  $8.00 \times 10^{27}$  molecules of air. If the tire is pumped up until it contains  $9.79 \times 10^{27}$  molecules of air, what will the new pressure be?

**Step One:** Check one answer about the pressure in the above problem

- pressure will decrease  
 pressure will increase *because more collisions*

**Step Two:** Solve below using dimensional analysis. Choose words before numbers. The solution will be one step.

$$6.0 \text{ atm} \times \left( \frac{9.79 \times 10^{27} \text{ molecules}}{8.00 \times 10^{27} \text{ molecules}} \right) = 7.3 \text{ atm}$$

Solved by (signature):

*Genest*

*can't use Celsius for gas math*