

Name Azmar Kumba

Date _____

Period _____

Boyle's Law Problems

1. A 1.5 liter flask is filled with nitrogen at a pressure of 12 atmospheres. What size flask would be required to hold this gas at a pressure of 2.0 atmospheres?
2. 300. Cubic centimeters of oxygen are collected at a pressure of 645 mmHg. What volume will this gas have at 1.00 atmosphere of pressure?
3. How many cubic feet of air at standard conditions (1.00 atm) are required to inflate a bicycle's tire of 0.5 cubic feet to a pressure of 3.50 atmospheres?
4. How much will the volume of 75.0 mL of neon change if the pressure is released from 50.0 psi to 8.00 psi?
5. What pressure is required to compress 196 liters of air at 115 kPa into a cylinder whose volume is 26 liters?

Pressure conversions

$$1 \text{ atm} = 101.3 \text{ kPa} = 760 \text{ mmHg} = 14.7 \text{ psi}$$

Show all work

1. $202.6 \text{ kPa} = \underline{\hspace{2cm}} \text{ atm}$

2. $800 \text{ mmHg} \underline{\hspace{2cm}} \text{ psi}$

3. $2.5 \text{ atm} = \underline{\hspace{2cm}} \text{ mm Hg}$

4. $3.2 \text{ atm} = \underline{\hspace{2cm}} \text{ psi}$

5. $1000 \text{ mmHg} = \underline{\hspace{2cm}} \text{ kPa}$

6. $28 \text{ psi} = \underline{\hspace{2cm}} \text{ kPa}$