GASES AND THEIR PROPERTIES - LECTURE NOTES

Homework Answers (solutions to the homework) (the **1's**) − *Craig*

PRACTICE PROBLEMS:

1. When reading a classroom barometer, you find that the mercury has risen to a height of 72.9 cm. What is the value expressed in kilopascals and atmospheres?

a) 72.9 cm Hg = ? kPa

$$\frac{72.9 \text{ cm Hg}}{} \; x \; \frac{10 \text{ mm Hg}}{1 \text{ cm Hg}} \; x \; \frac{1 \text{ torr}}{1 \text{ mm Hg}} \; x \; \frac{1 \text{ kPa}}{7.501 \text{ torr}} = 97.19 \text{ kPa}$$

$$\frac{72.9 \text{ cm Hg}}{} \; x \; \frac{10 \text{ mm Hg}}{1 \text{ cm Hg}} \; x \; \frac{1 \text{ torr}}{1 \text{ mm Hg}} \; x \; \frac{1 \text{ kPa}}{7.501 \text{ torr}} \; x \; \frac{1 \text{ atm}}{101.325 \text{ kPa}} = 0.959 \text{ atm}$$

b) 533 mm Hg = ? atm

$$\frac{533 \text{ mm Hg}}{} \; x \; \frac{1 \text{ torr}}{1 \text{ mm Hg}} \; x \; \frac{1 \text{ kPa}}{7.501 \text{ torr}} \; x \; \frac{1 \text{ atm}}{101.325 \text{ kPa}} = 0.701 \text{ atm}$$