Question 3 (worth 8 points or the equivalent of 2 multiple-choice questions)

(a)
$$2NO(g) + O_2(g) \rightarrow 2NO_2(g)$$

0.600 mol NO and 0.400 mol of O_2 are introduced into a rigid 5.00 L container and the reaction proceeds with 100% yield. The temperature at the end of the reaction is 28 °C. Calculate the total pressure in the container after the reaction is over. Include correct units with your answer.

Limiting reactant is NO. 0.600 mol NO reacts with 0.300 mol O_2 , forming 0.600 mol NO₂ with 0.100 mol O_2 left over.

After the reaction, there are $0.600 \text{ mol NO}_2 + 0.100 \text{ mol O}_2 = 0.700 \text{ mol gas total}$



Mercury goes from -3.2 cm to +3.2 cm or h = 6.4 cm = 64 mm = 64 torr

Pressure = 772 + 64 = 836 torr