

$$c) V_s = 75.80 - 16.96 \left(\frac{P_1}{P_2} \right)$$

$$V_1 = 16.96 \text{ cm}^3$$

$$V_2 = 75.80 - 16.96$$

$$V_2 = 58.84 \text{ cm}^3$$

d)

$$P_2 = 50.4 \text{ psig}$$

$$V_B = 32 \text{ cm}^3$$

$$P_1 = 150 \text{ psig}$$

$$V_s = 75.8 - 16.96 \left(\frac{150}{50.4} \right) \Rightarrow V_s = 25.32 \text{ cm}^3$$

$$\phi = 1 - \frac{V_s}{V_B} = 1 - \frac{25.32}{32} \Rightarrow \phi = 20.9\%$$

e) The porosity calculated in part (d) is the connected porosity, as it is the pores from the gas could enter.