

12.114

$$\ln \frac{P_2}{P_1} = \frac{\Delta H_{\text{vap}}}{R} \left(\frac{1}{T_1} - \frac{1}{T_2} \right)$$

$$\frac{P_2}{P_1} = \exp \left[\frac{\Delta H_{\text{vap}}}{R} \left(\frac{1}{T_1} - \frac{1}{T_2} \right) \right]$$

$$P_2 = P_1 \exp \left[\frac{\Delta H_{\text{vap}}}{R} \left(\frac{1}{T_1} - \frac{1}{T_2} \right) \right]$$

$$P_2 = (760 \text{ Torr}) \exp \left[\frac{(26.7 \text{ kJ})}{\text{mol}} \left(\frac{10^3 \text{ J}}{\text{kJ}} \right) \left(\frac{\text{mol K}}{8.3145 \text{ J}} \right) \left(\frac{1}{(46.5 + 273.15) \text{ K}} - \frac{1}{(28 + 273.15) \text{ K}} \right) \right]$$

$$\boxed{P_2 = 410 \text{ Torr}} \quad (\text{no pts off for sig figs})$$