16.28. **Model:** The gas is assumed to be ideal and it expands isothermally.
Solve: **(a)** Isothermal expansion means the temperature stays unchanged. That is $T_2 = T_1$.
(b) The before-and-after relationship of an ideal gas under isothermal conditions is

$$\frac{p_1V_1}{T_1} = \frac{p_2V_2}{T_1} \Rightarrow p_2 = p_1\frac{V_1}{V_2} = p_1\left(\frac{V_1}{2V_1}\right) = \frac{p_1}{2}$$