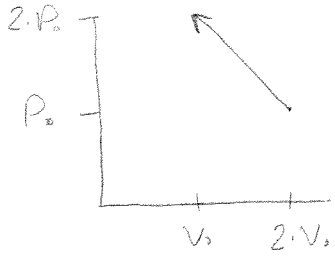
P # 14 Ch 12 - pg 384

$P_1 = P_0$
$V_1 = 2 \cdot V_0$

$P_2 = 2 \cdot P_0$
$V_2 = V_0$



W: Volume decreases, so by definition

Work = positive

ΔU: From $P \cdot V = n \cdot R \cdot T$ ... $T_1 = \frac{P_0 \cdot 2V_0}{n \cdot R} = \frac{2 \cdot P_0 \cdot V_0}{n \cdot R}$

$T_2 = \frac{2 \cdot P_0 \cdot V_0}{n \cdot R} = \frac{2 \cdot P_0 \cdot V_0}{n \cdot R}$

Since $T_1 = T_2$ **ΔU = zero**

Q: $\Delta U = Q + W$ so $Q = \Delta U - W$

From above: Q = (zero) − (positive)

Q = negative