P # P

Ch. 12

$U_A = 6482\ J$
$U_B = 4320\ J$

a) By definition of adiabatic: $\boxed{Q_{AB} = 0}$

b) $\Delta U = U_B - U_A = 4320\ J - 6482\ J = -2162\ J$

$\Delta U = Q + W$
$-2162\ J = 0 + W$ $\quad \boxed{W = -2162\ J}$

c) By definition of adiabatic: $\boxed{Q_{BA} = 0}$

d) $\Delta U = U_A - U_B = 6482\ J - 4320\ J = +2162\ J$

$\Delta U = Q + W$
$+2162\ J = 0 + W$ $\quad \boxed{W = +2162\ J}$