7. This problem requires a direct application of the first law of thermodynamics.

$$\Delta U = Q - W$$

or

$$Q = \Delta U + W$$

The problem stated that work was done <u>on</u> the system, so by our sign convention this is expressed with a negative sign.

$$Q = (800 \text{ J}) + (-2000 \text{ J}) = -1200 \text{ J}$$

The negative sign indicates that heat is transferred <u>from</u> the system. This is the case, because the work done <u>on</u> the system of 2000 J was sufficient to increase the internal energy by 800 J and to have excess energy that is manifested as heat transferred from the system.