9. 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>by</u> the system, so the work term has a positive sign.

$$Q = 600 \text{ J} + 700 \text{ J} = 1300 \text{ J}$$

This is a positive quantity, so heat was transferred <u>into</u> the system. Some of that heat energy went into doing work, and some of the energy went into increasing the internal energy.