

11. From problem #10 we know that, if the process in Fig. 21-5 should happen in reverse, then the change in entropy for the left block, which now absorbs energy, is  $\Delta S_L = +0.710 \text{ J/K}$ ; while for the right block  $\Delta S_R = -0.723 \text{ J/K}$ . The net change in entropy of the two-block system would then be

$$\Delta S = \Delta S_L + \Delta S_R = +0.710 \text{ J/K} - 0.723 \text{ J/K} = -0.013 \text{ J/K} < 0 .$$

This is a clear violation of the second law.