Each of two bodies has a heat capacity given, in the temperature range of interest, by

**C = A + BT**

* ***Where A = 8.0 J/K and B = 0.02 J/K2***.

If the two bodies are initially at temperatures: T10 = 400.0 K and T20 = 200.0 K, and if they are brought into thermal contact, what is the final temperature and what is the change in entropy?