A person decides to loose weight by eating only cold food. A 100 g piece of apple pie yields 1500 kJ of energy when eaten. It its specific heat is 1.7 kJ/kg °C, how much less energy is its energy component at 5°C than at 25°C?

Answer:

$Q = c \cdot m \cdot \Delta T$

$T_2 - T_1 = 25 - 5 = 20^0 C$

$Q_\Delta = 1.7 \cdot 0.1 \cdot 20 = 3.4$ kJ

So that the difference of energy content between cold and warm pie is 3.4 kJ.