

How much work is done to offset eating a 793 cal piece of cake?

Work is energy, calories are a unit of energy, but one that is typically reserved for heat energy only. This problem only requires you convert calories to Joules, $1 \text{ cal} = 4.18 \text{ J}$

3314.74 Joules

What is the specific heat of a 15 kg object if 100 kcal of heat are required to raise the temperature from 15 to 19 degrees C?

$$Q = c m \Delta T$$

$$100 \text{ kcal} = c (15 \text{ kg}) (4 \text{ degrees C})$$

$$1.67 \text{ kcal / kg C}$$