Answer on Question #46625-Physics-Other

If the specific heat capacity of water initially is $c = 4.2 \cdot 10^3 \frac{J}{kgK}$ and $g = 10 \frac{m}{s^2}$, the difference in temperature of water between the top and bottom of a $h = 210\ m$ high water fall is

Solution

According to the conservation of energy law

$$mc\Delta t = mgh.$$

The difference in temperature of water between the top and bottom of a high water fall is

$$\Delta t = \frac{gh}{c} = \frac{10 \frac{m}{s^2} \cdot 210\ m}{4.2 \cdot 10^3 \frac{J}{kgK}} = 0.5\ K.$$

Answer: $0.5\ K$.