A 50 kg man is running at a speed of 18 km h^{-1}. If all the kinetic energy of the man can be used to increase the temperature of water from 20°C to 30°C, how much water can be heated with this energy?

Kinetic energy of man $= \frac{1}{2} mv^2$

$= \frac{1}{2}(50)(5)^2$ $\left\{18\,km/h \times \frac{5}{18} = 5\,m/s\right\}$

$\boxed{(K.E)_{man} = 625\,J}$

Let 'm' mass of water can be heated

$\therefore \quad mS(70-20) = 625$

$\Rightarrow m(4200)(10) = 625$ (S of water $= 4200\,J/kg-K$)

$\Rightarrow \quad m = 14.88\,g \approx 15\,g$

$\Rightarrow \boxed{m = 15\,g}$