Question 18991

According to 2nd Newton's law, the acceleration is $a=\frac{F}{m}=\frac{7}{3}m/s^2$. From the given distance, solve for time: $S=v_0t+\frac{a\,t^2}{2}=120\,;120=\frac{100}{9}t+\frac{7}{6}t^2\Rightarrow t\approx 6.44\,s$ (Here we converted the initial velocity from km/s into m/s). Plugging this time into the law of change of velocity $v=v_0+at$, obtain $v=\frac{100}{9}+\frac{7}{6}\cdot 6.44\approx 18.62\,m/s\approx 67\,km/h$.