

Question 24639

According to given conditions, $a=3 \frac{m}{s^2}$; $t=4s$; $v_0=0 \frac{m}{s}$.

For accelerated motion, velocity as function of time is $v(t)=v_0+at$, and covered distance is $S(t)=\int_0^t v(t) dt=v_0 t+\frac{at^2}{2}$.

Hence, for our task velocity after 4 seconds is $v=v_0+at=0+3 \frac{m}{s^2} \cdot 4 s=12 \frac{m}{s}$.

Covered distance after 4 seconds is $S=v_0 t+\frac{at^2}{2}=0+\frac{3 \cdot 4^2}{2}=24 m$.