Answer on Question #46823, Physics, Mechanics | Kinematics | Dynamics

Since the car is moving with constant acceleration and initial velocity is zero, the time dependence of velocity with respect to time is $v(t)=at$. Using the fact, that velocity is $24\frac{m}{s}$ at $t=6$,

obtain $a=\dfrac{24\frac{m}{s}}{6s}=4\frac{m}{s^2}$.

Hence, the law of motion is $S(t)=\dfrac{at^2}{2}=2t^2$.

Thus, the car traveled $l=S(t=6)-S(t=3)=2(6^2-3^2)=54m$ between $t=3s$ and $t=6s$.