**Motion of a Particle**

(a) The distance $s$ of a particle at time $t$ is given by $s=5t^{2}+8t+3$. Find an expression for the velocity $v$ of the particle, and the velocity after 6 seconds.

(b) The distance $s$ of a particle at time $t$ is given by $s=t^{3}+2t^{2}+10t-3$. Find an expression for the velocity $v$ of the particle, and the velocity after 2 seconds.

(a) The distance $s$ of a particle at time $t$ is given by $s=0.5t^{3}-0.1t^{2}$. Find expressions for the velocity $v$ and acceleration $a$ of the particle. Find the acceleration after 4 seconds.

(b) The distance $s$ of a particle at time $t$ is given by $s=5t+3t^{2}+t^{3}$. Find expressions for the velocity $v$ and acceleration $a$ of the particle. Find the acceleration after 0.5 seconds.

(a) The distance $s$ of a particle at time $t$ is given by $s=2t^{2}-6t$. Find the time at which the velocity is instantaneously zero.

(b) The distance $s$ of a particle at time $t$ is given by $s=2t^{3}-15t^{2}+9t$. Find the time at which the acceleration is instantaneously zero.

A particle travels in a straight line where the distance from the origin O is given by $s=2t^{2}-\frac{3}{t}$. Find the velocity and acceleration of the particle after 5 seconds.

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