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1.) Velocity = $\frac{dx}{dt}$, $\frac{dy}{dt}$, $\frac{dz}{dt}$.

$\frac{dx}{dt} = 24t^2$, $\frac{dy}{dt} = 12t^2 - 7$, $\frac{dz}{dt} = 1$.

$\Rightarrow (24t^2)i + (12t^2 - 7)j + 1k$.

∴ Alleleration

$\frac{d^2x}{dt^2} = 48t$, $\frac{d^2y}{dt^2} = 24t$, $\frac{dz}{dt} = 0$.

2.) $\vec{B} = (3t, t^3, t^2)$

$\frac{d\vec{B}}{dt} = (3, 3t^2, 2t)$. $\Rightarrow$

Magnitude = $\sqrt{(3)^2 + (3t^2)^2 + (2t)^2}$

$\Rightarrow \sqrt{9 + 9t^4 + 4t^2}$.

$\Rightarrow \frac{1}{\sqrt{9 + 9t^4 + 4t^2}} (3, 3t^2, 2t)$.