Keystone: Chapter 1

A particle is initially at position $\vec{r}_0 = \langle 3, -4, 4 \rangle \text{m}$. After 0.3 seconds, it has moved to position $\vec{r} = \langle 6, -5, 4 \rangle \text{m}$.

a) What is the average velocity of the particle? (Calculate both the magnitude and unit vector direction.)

b) If the particle does not interact with any other object, where will it be in another 0.5 seconds?

c) Assuming the particle has a mass of 1.5 kg, what is the momentum of the particle?