12D Forces as Vectors

1. A particle of mass 0.5kg is acted on by 3 forces:

$$F_1 = (2i - j + 2k)N$$
$$F_2 = (-i + 3j - 3k)N$$
$$F_3 = (4i - 3j - 2k)N$$

a) Find the resultant force, R, that acts on the particle.

b) Find the acceleration of the particle

c) Find the magnitude of the acceleration

d) Given that the particle starts at rest, find the distance travelled in the first 6 seconds of its motion