Forces on Single Charged Particles You use F = ILB(sin (R)) to determine the force on a current-carrying wire in a magnetic field.F = quB (sin 0) Recall that charge is measured in coulombs (C), velocity in meters per second (m/s), and magnetic field strength in teslas (T).In this case, q is the charge of the electron and t is the time it takes for the electron to move the distance L. To find the time required for a particle with sooad a to travel distance I won would use thie equation of motion, x = vt, or, in this case, t = }.As a result, you can replace the equation for the current, 1 = 7, by I = Zo Force of a Magnetic Field on a Moving Charged Particle The amount of force from a magnetic field on a particle equals the product of the particle's charge, its speed, the magnetic field strength, and the sine of the angle between the particle's velocity and the magnetic field.For a particle moving at right angles to a magnetic field, sin 0 = 1, so F = quB.Get It?