26. a. By using right hand rule, if we wrap our fingers in the direction from v to B, our thumb point opposite of force. So the charge of the particle.

b.

$$m = \frac{e \cdot B}{V}$$

$$m = \frac{(1.6\times10^{-19})(0.52)(0.18)}{6\times10^{5}} \doteq 1.57\cdot10^{-27}$$

$$m = 1.49\ u$$

$$\approx 1.5u$$

50.

a By using right hand rule, we find that both field are in the same direction in point A, while in point B they are in opposite direction.

∴ the magnitude of field in point A is greater.

b.

$$B_1 = \frac{4\pi\cdot10^{-7}\cdot I_1}{2\pi\cdot0.16} = \frac{4\pi\cdot10^{-7}\cdot6.2}{2\pi\cdot0.16} = 7.8\cdot10^{-6}$$

$$B_2 = \frac{4\pi\cdot10^{-7}I_2}{2\pi\cdot0.16} = \frac{4\pi\cdot10^{-7}\cdot4.5}{2\pi\cdot0.16} = 5.6\cdot10^{-6}$$

$$B_A = B_1 + B_2 = 13.4\cdot10^{-6}\ T$$

$$B_B = B_1 - B_2 = 2.2\cdot10^{-6}\ T$$

53.

a. $\frac{F}{L} = \frac{\mu_0 I_1 I_2}{2\pi d}$

$$\frac{F}{L} = \frac{4\pi\cdot10^{-7}(2.75)(433)}{2\pi(0.0925)}$$

$$\frac{F}{L} = 2.57\cdot10^{-5}$$

b. ∵ The force of two wire form a action-reaction pair

∴ They are same

60.

a. 0, 0.2 and 0.4

b. $|\varepsilon| = N\left|\frac{d\phi}{dt}\right|$

when the t at 0.1, 0.3 and 0.5, the graph have the biggest slope. So at these time the induced emf is the biggest.