1 a) 2.88×10^{11} N/C to left

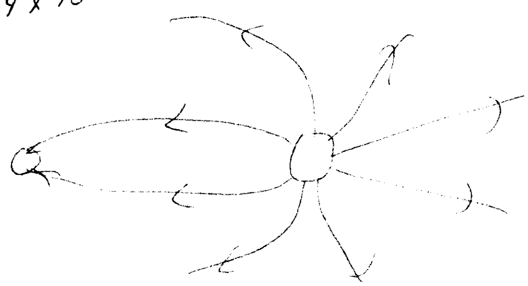
b) 4.61×10^{-8} N to right, $a = 5 \times 10^{22}$ m/sec^2

short: (c) Yes, II, positive, I

(d) molecules in wall line up — giving net charge to surface

3: (a) 5.25×10^{7} N/C to left, $F = 8.4 \times 10^{-12}$ N

(b) 7.5×10^{6} to left (c)



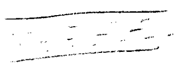
4. (a) 3.4×10^{-9}

(b) 22.5 N

(c) $E = 0$, $V = 1.8 \times 10^{6}$ Volts

5: (a) 10^{-3} C

(b)



(c) $V = 10$ Volts, $Q = 2 \times 10^{-3}$ C

6: (a)

	10 Ω	30 Ω
I	3 amps	3 amps
V	30 V	90 V
P	90 W	270 W

(b)

	10 Ω	30 Ω	60 Ω
I	4 amps	8/3 amps	4/3 amps
V	40 V	80 V	80 V
P	160 W	$\frac{640}{3}$ V	$\frac{320}{3}$ V

8: (a) 240 W, 2.4 cents

(b) 1250 Ω

(c) 10 V, 10^{-4} coul

5: (a) 4 cm

(b) 8.4×10^{-4} N

(c) 125 μF

1: (a) $R_1 = 1000$ Ω, $R_2 = 500$ Ω, $R_3 = 200$ Ω

(b) $I_1 = .1$ amp, $I_2 = .2$ amp, $I_3 = .5$ amp

(c) $P_1 = 3.4$ W, $P_2 = 1.7$ W, $P_3 = .7$ W

3: (a) 1.4×10^{7} m/sec (b) 1.44×10^{-15} m. No (d) 3.1×10^{10} J, 1 Hiroshima = 1600 bolts

2: (a) 1.1×10^{-8} F (b) 2.4×10^{9} V (c) 26.4 Coulombs

4. (a) 2×10^{-3} m/sec east (b) $I = 4$ amps, $B = 2 \times 10^{-5}$ T (40% B_{earth})

2: (a) 6×10^{-12} F, (b) 3.6×10^{-13} Coul, 2×10^{6} ions (c) .06 eV (d) 1.05×10^{-14} J

3. (a) .034 Ω (b) 350 Amps ↓ (c) 3.5 N out of paper