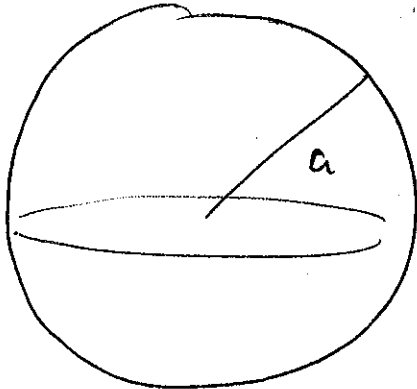


PRACTICE FINAL EXAM

PROBLEM #1

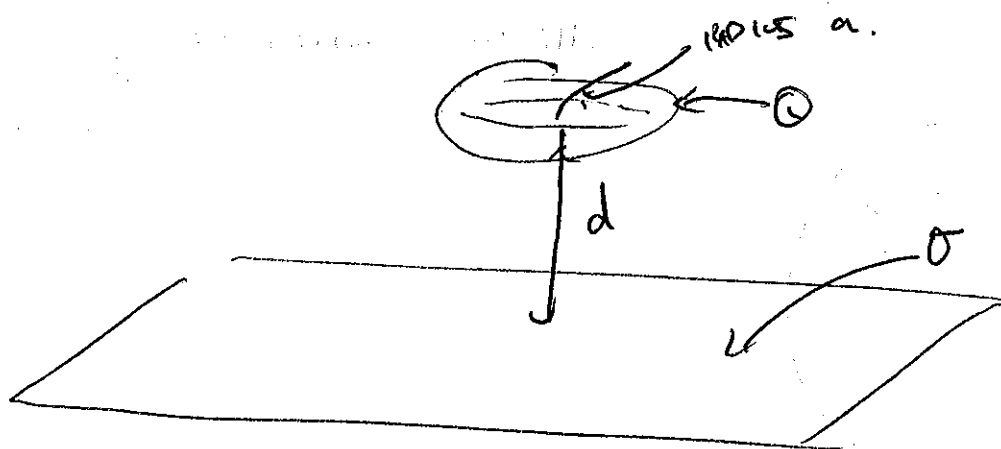
CALCULATE ELECTRIC FIELD DUE TO AN UNIFORMLY CHARGED SPHERE WITH RADIUS a WITH VOLUME CHARGE DENSITY OF ρ .



CALCULATE ELECTRIC POTENTIAL DUE TO THE SAME.

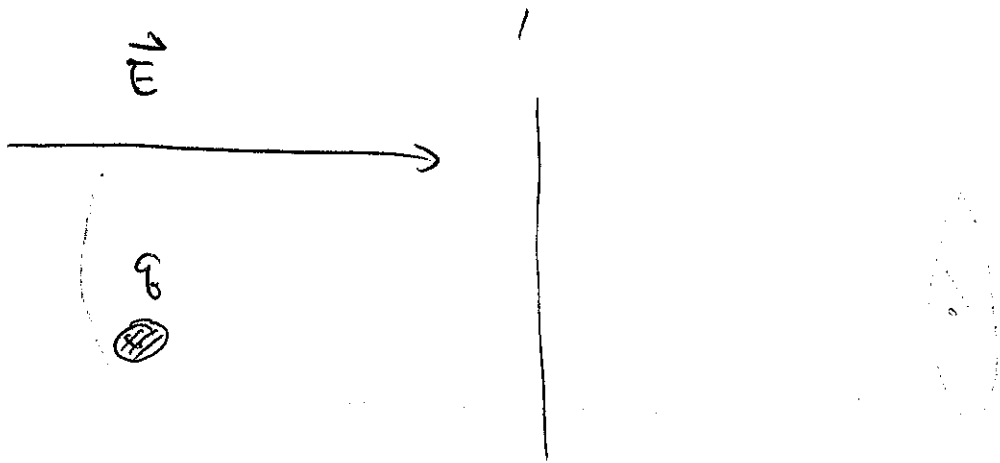
PROBLEM #2

CALCULATE FORCE BETWEEN AN UNIFORMLY CHARGED SPHERE WITH CHARGE Q AND AN INFINITE CHARGED PLANE WITH CHARGE DENSITY σ .



PROBLEM #3

- a) CALCULATE FORCE ON CHARGE q IN ELECTRIC FIELD \vec{E}

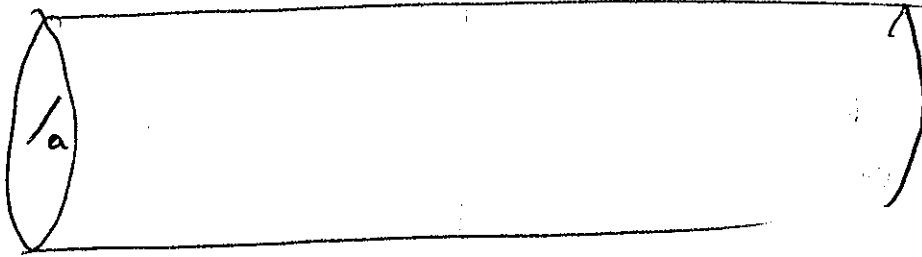


- b) CALCULATE POSITION OF THE SAME CHARGE WITH RESPECT TO THE ORIGINAL POSITION

- c) CALCULATE THE VELOCITY OF AN ELECTRON WITH ENERGY OF 100 eV

PROBLEM # 4

CALCULATE MAGNETIC FIELD DUE TO A WIRE
IF CURRENT THRU THE WIRE IS GIVEN BY I_0

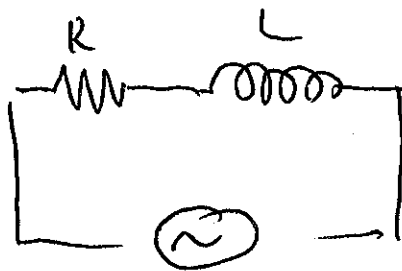


PROBLEM # 5

CALCULATE INDUCTANCE OF A SOLENOID WITH
N COILS LENGTH l , AND AREA (πR^2) = A .

PROBLEM # 6

a) CALCULATE IMPEDANCE FOR FOLLOWING CIRCUIT.



$$Z_R = R \quad Z_C = i\omega L$$
$$Z_C = \frac{1}{i\omega C}$$

b) CALCULATE PHASE OF CURRENT
~~WIT RESPE~~
WITH RESPECT TO THE DRIVEN
VOLTAGE

10/10/2020

1. The number of ways in which 1000000 can be written as the sum of 1000000 natural numbers is

$$= \binom{1000000 + 1000000 - 1}{1000000 - 1} = \binom{2000000 - 1}{1000000 - 1}$$

2. The number of ways in which 1000000 can be written as the sum of 1000000 natural numbers is

$$= \binom{1000000 + 1000000 - 1}{1000000 - 1}$$

3. The number of ways in which 1000000 can be written as the sum of 1000000 natural numbers is

$$= \binom{1000000 + 1000000 - 1}{1000000 - 1}$$

4. The number of ways in which 1000000 can be written as the sum of 1000000 natural numbers is

$$= \binom{1000000 + 1000000 - 1}{1000000 - 1}$$

5. The number of ways in which 1000000 can be written as the sum of 1000000 natural numbers is



6. The number of ways in which 1000000 can be written as the sum of 1000000 natural numbers is

$$= \binom{1000000 + 1000000 - 1}{1000000 - 1}$$

7. The number of ways in which 1000000 can be written as the sum of 1000000 natural numbers is

$$= \binom{1000000 + 1000000 - 1}{1000000 - 1}$$