Name: Electrostatics/Magnetism Quiz

For formulas, constants, and charge of an electron, look to the formula board.

1. Find the electric force between a 32µC and a -45µC when they are 41.0cm apart? Please include the direction of the force (4 marks)
2. Please draw the electric field line for the following diagram. (1 mark each)
3. b.

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1. Charges q1 =7.0µC, q2 =2.0µC, q3 =3.0µC are arranged in the following situation. What is the net force on q2? Include the direction. (7 marks)

q1 q2 q3

25cmm

75cmm

1. Find the Electric Field generated by a 93µC at a point 1.2m away from the charge? (2 marks)
2. A current carrying wire is going into the page. Draw the magnetic field around the wire. (1mark)

X

1. A 0.50m wire carries a current of 8.0A vertically up in a 0.40T magnetic field directed North. What is the force acting on the wire? (3 marks)
2. What is the magnitude and direction of a magnetic field for a current carrying wire (I=16A) that is coming out of the page at a point 5cm West of the wire. Include a diagram. (3 marks)
3. A 50.cm copper wire carries a 6.0A current from left to right and weighs 0.75N. The wire floats in a magnetic field. What is the strength and direction of the magnetic field? (2 marks)
4. An electron is fired into a 4.20T magnetic field with a velocity of 240m/s. What is the strength of the force on the electron? No direction required. (2 marks)
5. An electron moving East goes through a magnetic field directed North. The electron experiences a magnetic force in what direction? (1 mark)