IB Physics
FA 16.2 - Vector Field

Name_____

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Show your work, and circle your answers and use sig figs to receive full credit.

When you have finished this, go to the website and check your answers. If you got a problem wrong, cross it off on the front, and do it correctly on the back.

1. A uniform electrical field exerts a force of 0.890 N to the left on a -410. μC charge. What is the change in electrical potential if you move 2.60 m to the left? Is it an <u>increase</u> in potential, or a <u>decrease</u>?

2. If you move a mass vertically from point A to point B in a uniform gravitational field, the potential changes from -12.0 J/kg to +23.0 J/kg in a distance of 17.0 m. What force does the field exert on a 5.20 kg mass, and which point is at a higher elevation, A or B? Does the field point toward A or B?

3. What is the electric field 34.5 cm above a -12.0 μC charge?

4. Find the gravitational field at p and at point q:

m 6.30×10^6 m (p) 2.30×10^6 m m 1.70×10^6 m (q)

6.20×10^{24} kg 8.70×10^{22} kg

5. Find the electric field at point p. Draw the electric field vector, and label its magnitude and direction. Charge A is -1.80 μC, B is +2.60 μC, and each grid line is a meter.