**IB Physics**

**FA 16.2 - Vector Field**

Name

Favorite YouTube Video (besides Physics ones)

**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 increase in potential, or a decrease?

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:

6.20x1024 kg

8.70x1022 kg

m

m

6.30x106 m

 (p)

(q)

2.30x106 m

1.70x106 m

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.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **A** |  |  |  |  |
|  |  |  |  | **p** |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  | **B** |  |  |  |  |
|  |  |  |  |  |  |