**IB Physics**

**16 A-D Group Quiz**

Name

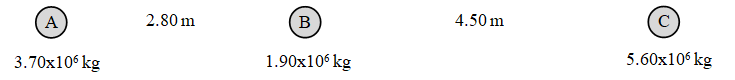
**Show your work, and circle your answers and use sig figs to receive full credit.**

1. What is the force of attraction between a -10.1 μC charge and a +34.1 μC charge if their centers are 67.0 cm apart? Is it a force of attraction or repulsion?

2. Two point charges have a force of repulsion of 45.3 N when they are 2.30 m separated. What is the force of repulsion if they are separated by only 1.25 m?

3. 450. Kg wrecking ball experiences a force of attraction to a 5.10 kg shot of 6.30x10-10 N. What distance separates their centers?

4. Two point masses have a force of attraction of 2.30x10-12 N when they are separated by 56.0 cm. What is their separation if the force of attraction is 5.80x10-12 N?

5. Find the net force and direction on masses **A**, **B** and **C**: ****

3.70x106 kg

1.90x106 kg

5.60x106 kg

4.50 m

2.80 m

**A =**

35.0 cm

23.0 cm

**B =**

**C =**

6. Find the net force and direction on charges **A, B** and **C**:

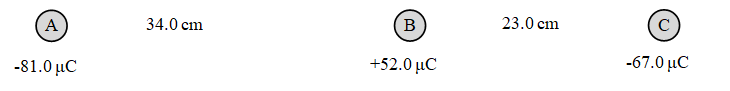
3.70x106 kg

1.90x106 kg

5.60x106 kg

4.50 m

2.80 m

****

**A =**

35.0 cm

23.0 cm

**B =**

35.0 cm

23.0 cm

**C =**

7. Each grid line is a meter. Charge A is -430. µC, and charge B is +120. µC, and C is +780. µC. **Calculate the force on charge C**. Draw the force vector and label its magnitude and direction.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **A** |  |  |  |  |
|  |  |  |  |  | B |
|  |  |  |  |  |  |
|  |  |  | **C** |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

9. Each grid line is a meter. Mass A is 1.20x106 kg, and mass B is 3.10x106 kg, and C is 6.80x106 kg. **Calculate the force on mass A**. Draw the force vector and label its magnitude and direction.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  |  | B |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
| **A** |  |  |  |  |  |
|  |  |  |  |  | **C** |
|  |  |  |  |  |  |