PY212

**Quiz 3**

Three charges are placed in a straight line, with 4 m separation between the first charge Q and the second charge – 2Q, and between the second charge -2Q and the third charge Q, as shown.

*A*

3 m

4 m

4 m

-2Q

Q

Q

Calculate the following quantities. Please show your work for each.

1. The potential energy of the configuration.
2. The potential at point *A,* located 3 meters above the middle charge.
3. Suppose you brought a charge *Q* from infinity to the location *A*. How much work would you have to do? Is that work positive, negative, or zero?