Electric Potential Energy Practice Name:_____

Reflection and Self-Assessment

Completion: Circle the statement that best describes the completion of this practice.

- I completed every question on the practice.
- I did not complete some questions on the practice because:

_____

Answer Checking: Circle the statement that best describes how you checked your answers

- I checked all my answers against the key at the back and corrected any that were incorrect.
- I did not check all my answers and correct any mistakes because:

_____

Online Worked Solution: Circle the statement that best describes how you used the online worked solutions.

- I did not use the online worked solution at all.
- I used the online solution to understand some questions I got incorrect.
- I used the online solution to help me learn how to answer some questions.

Confidence: Circle the statement that best describes your confidence in answering questions of this type in the future.

- I am confident I can answer nearly any question of this type correctly without using notes or other assistance.
- I am confident I can answer **MOST** questions of this type correctly without using notes or other assistance.
- I am **NOT** confident I can answer most questions of this type correctly without using notes or other assistance.

Time: Circle the statement below that best describes the total amount of time you spent actively working on this practice:

Less than an hour	Between one and two hours	Between two and three hours	Between three and four hours	More than four hours

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1. A positive charge is brought closer to another positive charge.
    a. Does its electric potential energy increase or decrease?

    b. Is the work done to it positive or negative?

2. A negative charge is brought closer to a positive charge.
    a. Does its electric potential energy increase or decrease?

    b. Is the work done to it positive or negative?

3. Give an example of a situation where a charge would have positive electric potential energy.

4. Give an example of a situation where a charge would have negative electric potential energy.

5. When would a charge have zero electric potential energy?

6. If there was a force that was always repulse would the potential energy associated with that force be always positive or always negative?

7. Positive work is done to bring two charges closer together. Circle any of the following which are possible.

   Both charges are positive

   Both charges are negative

   One charge is positive and one charge is negative

8. A $1.0\ \mu C$ charge is brought near a $5.0\ \mu C$ charge. What is the electric potential energy of the $1.0\ \mu C$ charge relative to infinity when the charges are
   a. 5.0 metres apart?

   b. 2.0 metres apart?

   c. 0.50 metres apart?

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9. A $-5.0\mu C$ charge with mass of 0.022 kg is 0.15 metres away from a $-24\mu C$ charge. If it is allowed to move freely with no other forces affecting it how fast will it be moving when it is infinitely far away from the $-24\ \mu C$ charge?

10. A $2.5\ \mu C$ charge of mass 0.19 kg is 26 metres away from a $-65\ \mu C$ charge. If it is allowed to move freely with no other forces affecting it how fast will it be moving when it is 0.25 metres away from the $-65\ \mu C$ charge?

11. The electric potential energy of a $56\ \mu C$ charge is 52.6 J when it is 2.0 metres from a second charge. What is the second charge?

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12. The electric potential energy of a $-25\ \mu C$ charge is -2.35 J when it is a certain distance from a $56\ \mu C$ charge. What is the distance between the charges?

13. A positive charge is brought from infinitely far away to a point between a positive and a negative charge. Does this take more or less energy than if it was brought to the same point but there was only a positive charge?

14. A charge of $2.5\ \mu C$ is brought from infinitely far away to a point 1.0 metres from a $+25\ \mu C$ charge and 0.50 metres from a $-5.0\ \mu C$ charge. How much work is needed to do this?

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Answer Key				
1a) Increase	1b) Positive	2a) Decrease	2b) Negative	3) A negative charge near a negative charge, or a positive charge near a positive charge
4) A positive charge near a negative charge	5) When it is infinitely far from a charge (or equally far for an equal positive and negative charge)	6) Always positive	7) Both charges are positive or both charges are negative	8a) 0.0090 J
8b) 0.022 J	8c) 0.090 K	9) 26 m/s	10) 7.8 m/s	11) 2.1×10^{-4} C
12) 5.4 m	13) Less	14) 0.34 J		