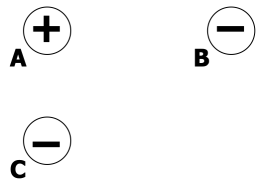
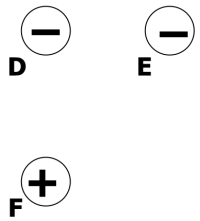
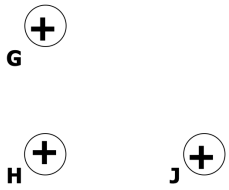
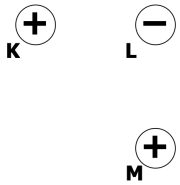
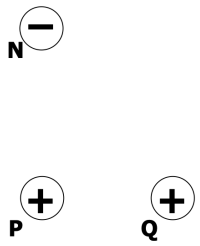
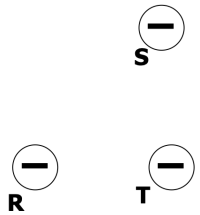
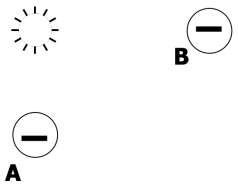
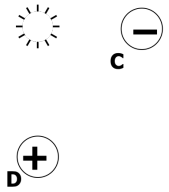
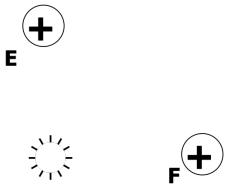
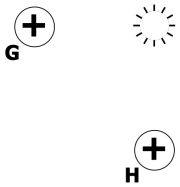
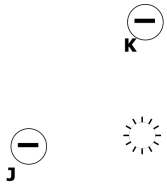
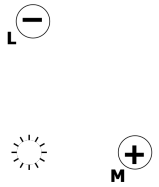
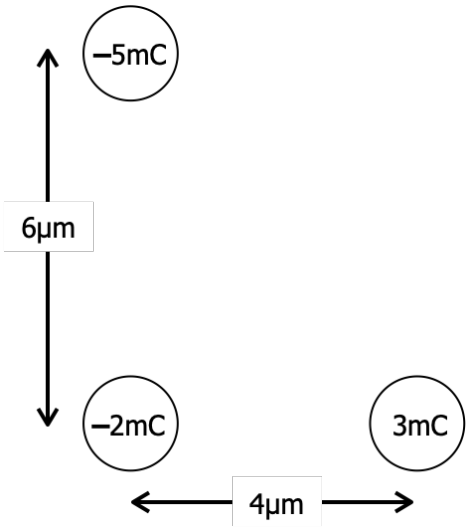
[1] When solving Coulomb's Law and electric field problems, one of the crucial steps is to draw a triangle showing the forces/fields' directions, the net force/field, and the angle. We called this the "Solution Triangle." Draw a free body diagram for the particles in the "corner" **AND** the solution triangle.

[2] When solving Coulomb's Law and electric field problems, one of the crucial steps is to draw a triangle showing the forces/fields' directions, the net force/field, and the angle. We called this the "Solution Triangle. Draw the solution triangle for the highlighted empty space on the image.

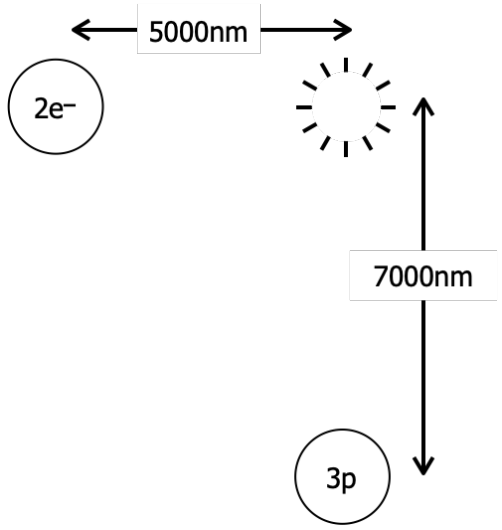
	
	
	
	
	
	

[3] Calculate the force (magnitude and direction) on the –2mC charge.



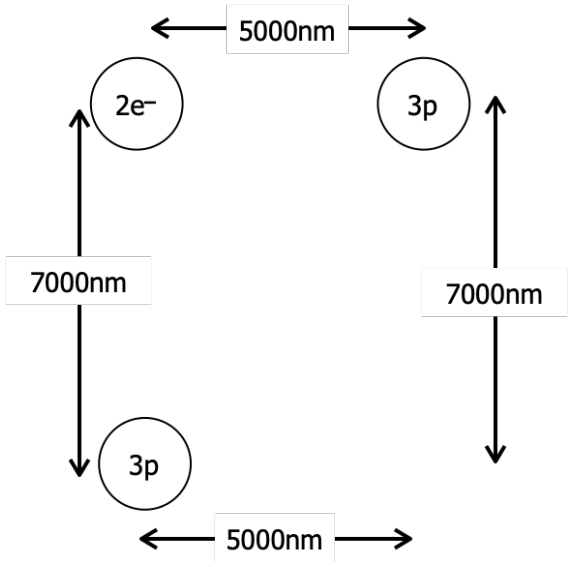
Answer _____

[4] Calculate the electric field at the empty space on the picture that is indicated by this symbol, ✳.



Answer _____

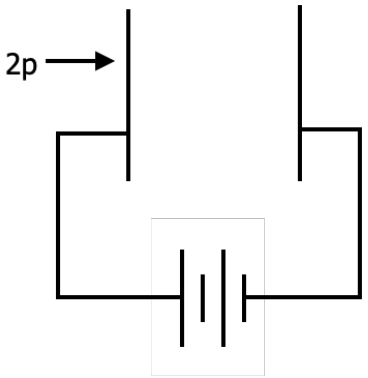
[5] Calculate the electric potential difference as a charge is brought from infinity to the location in empty space at the lower right of these charges.



Answer _____

[6] A particle is passes through a hole on the left metal plate in the schematic below. The particle enters a region between the charged plates. Will the particle gain or lose, kinetic energy **AND** potential energy?

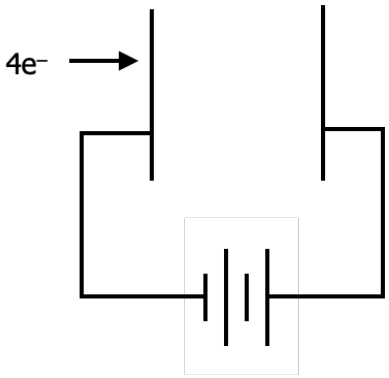
a.



Kinetic energy, KE:

Potential energy, PE

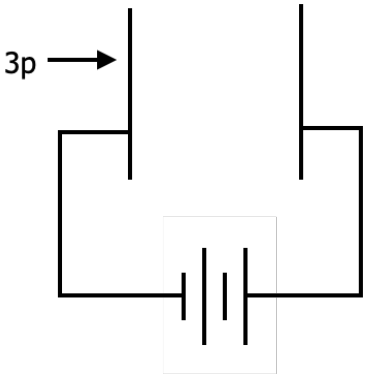
b.



Kinetic energy, KE:

Potential energy, PE

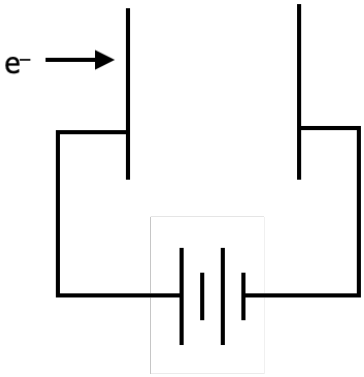
c.



Kinetic energy, KE:

Potential energy, PE

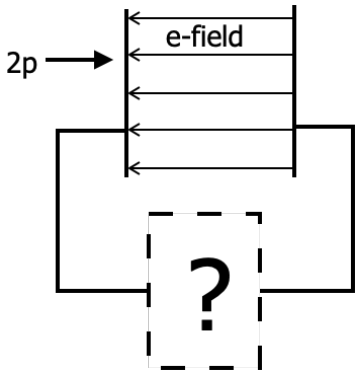
d.



Kinetic energy, KE:

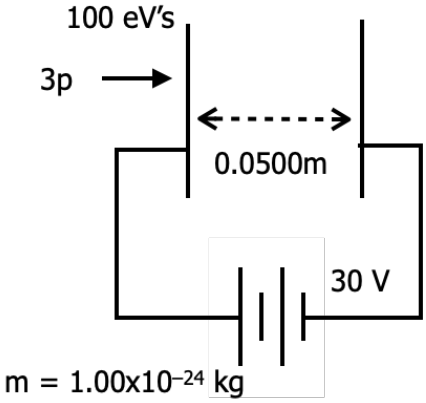
Potential energy, PE

[7] Given the drawn e-field, which plate is connected to the negative side of the battery?



Answer _____

[8] A particle is passes through a hole on the left metal plate in the schematic below. The particle enters a region between the charged plates. What is the particle's velocity when it reaches the opposite plate?



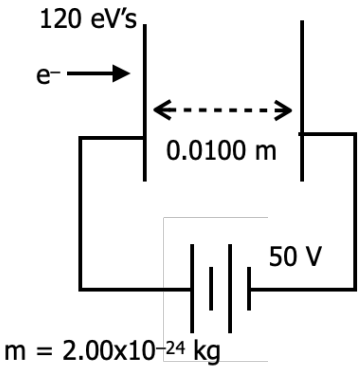
Answer _____

A particle is passes through a hole on the left metal plate in the schematic below. The particle enters a region between the charged plates.

[9]

(a) What is the strength of the e-field in the situation shown below?

(b) Draw the e-field's direction.

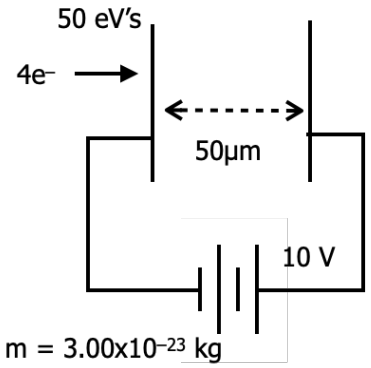


Answer _____

[10]

(a) How much work is done as a particle crosses the plates shown below?

(b) Draw the e-field between the plates..

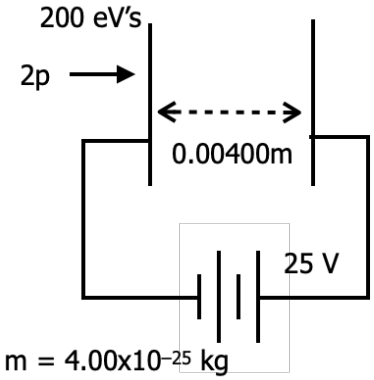


Answer _____

[11]

(a) How much force does the particle feel while it is between the two plates shown below?

(b) Draw the e-field between the plates.

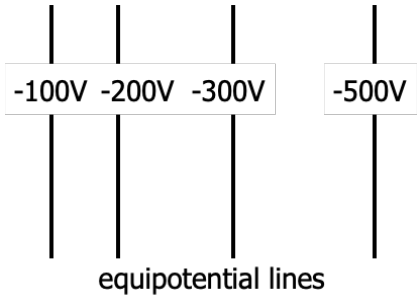


Answer _____

Given the equipotential lines below,

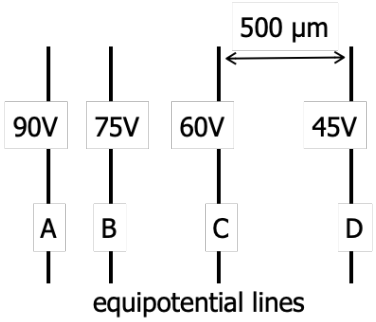
[12]

(a) Draw a LARGE "+" sign the side that is at the higher electric potential.
(b) Draw the electric field across the equipotential lines.



[13]

(a) What is the strength of the electric field between the equipotential lines "C" and "D"
(b) Draw the e-field between the plates across the equipotential lines.



[14] A negatively charged particle travels in the same direction as the electric field. Will the particle gain or lose, kinetic and potential energies? Explain how you came to this conclusion.

Kinetic energy, KE:

Potential energy, PE