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QUESTION 1

Choose the correct answer.

A small charged object of mass 2.10 g and charge

$-1.14\ \mu C$

is suspended above the ground when it experiences a uniform electric field. What are the magnitude and the direction of the electric field experienced by this negative charge?

The gravity on Earth is

$9.81\ m/s^2$

.

- $1.81 \times 10^4\ N/C$ upward
- ✓ $1.81 \times 10^4\ N/C$ downward
- $2.45 \times 10^4\ N/C$ upward
- $2.45 \times 10^4\ N/C$ downward

QUESTION 2

Select from the drop-down menu the correct answer.

Field lines ✓ are lines that represent the strength and direction of a field at any point between a source and test charge.

QUESTION 3

Select the correct choices.

Which of the following statements below are true?

- [ ] Neutral objects are called the sinks of the field.
- [ ] Negative charges are called the sources of the field.
- [ ] Neutral objects are called the sources of the field.
- [ ] Positive charges are called the sinks of the field.
- [x] Negative charges are called the sinks of the field. ✓
- [x] Positive charges are called the sources of the field. ✓

QUESTION 4

Select from the drop-down menu the correct answer.

As the density of field lines in a region around an electric charge increases, the magnitude of the electric field gets stronger ✓ .

QUESTION 5

Select the correct answer concerning the electric field.

- [x] The electric field is a vector quantity that can be found at any point in space around a charged particle. ✓
- [ ] The electric field is a vector quantity that can only be found at specific points in space around a charged particle.
- [ ] The electric field is a scalar quantity that can only be found at specific points in space around a charged particle.
- [ ] The electric field is a scalar quantity that can be found at any point in space around a charged particle.

QUESTION 6

Select the correct answers.

Determine the direction of the electric field and the electrostatic force exerted on the negatively charged particle.



- [x] The electric field lines point towards the negatively charged particle.
- [ ] The electric fields point away from the negatively charged particle.
- [x] The electrostatic force on the negatively charged particle acts to the right.
- [ ] The electric field lines point towards the positively charged particle.
- [ ] The electrostatic force on the negatively charged particle acts to the left.
- [ ] The electrostatic force on the negatively charged particle acts upward.

QUESTION 7

Select from the drop-down menu the correct answer.

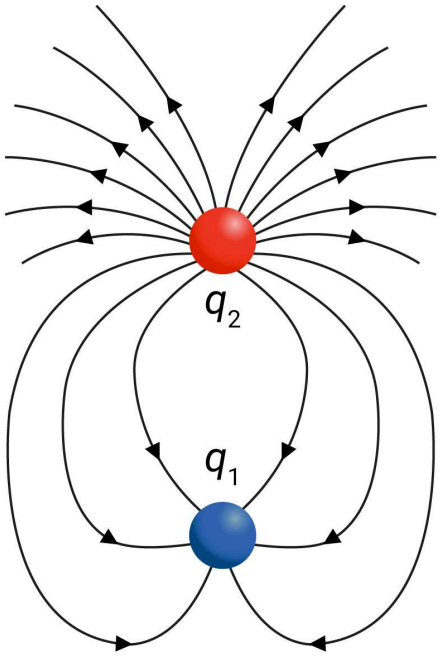
The electric field lines between two charged objects are shown at the right. The charge

q_1

has an excess of electrons ✓, while the charge

q_2

has a deficit of electrons ✓.



QUESTION 8

Select the correct choice.

Which of the following describes the electric field around a point charge?



- The electric field is directed radially inward to a positive charge.
- The electric field is directed tangentially inward from a positive charge.
- The electric field is directed radially outward from a positive charge

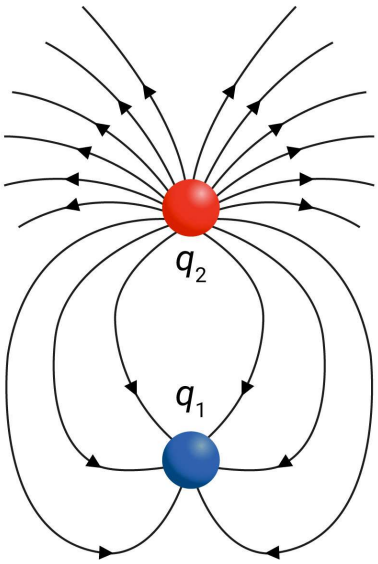
The electric field is directed radially outward from a positive charge.

The electric field is directed tangentially outward from a positive charge.

QUESTION 9

Select the correct answer.

The electric field lines for two point charges are shown on the right. The electric field lines are directed from q_2 to q_1. Find the ratio of $\frac{q_2}{q_1}$.



3

$1/3$

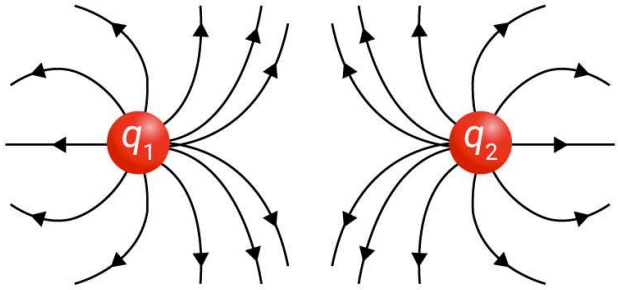
$1/4$

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QUESTION 10

Select the correct answer.

Determine the charge of
q_1
and
q_2
from the figure on the right.



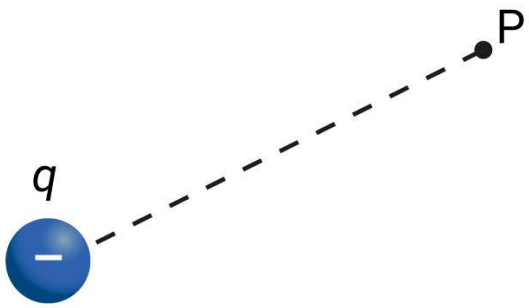
- q_1 is negative and q_2 is positive
- both q_1 and q_2 are positive ✓
- q_1 is positive and q_2 is negative

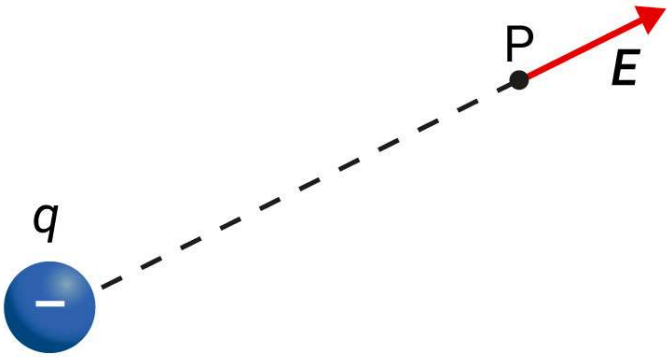
both
q_1
and
q_2
are negative

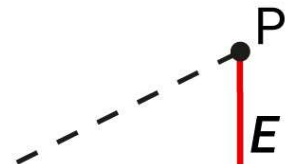
QUESTION 11

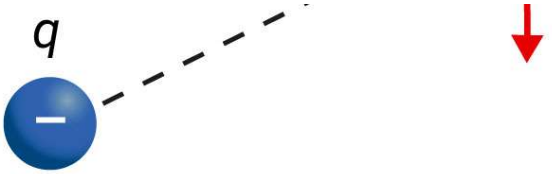
Select the correct answer.

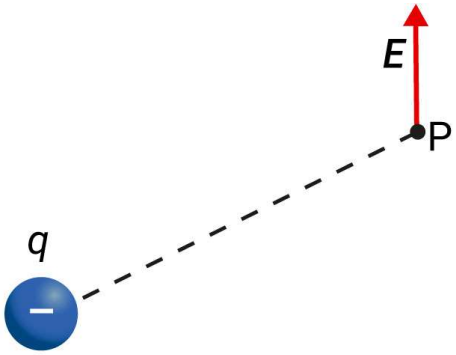
What is the direction of the electric field line at point P?

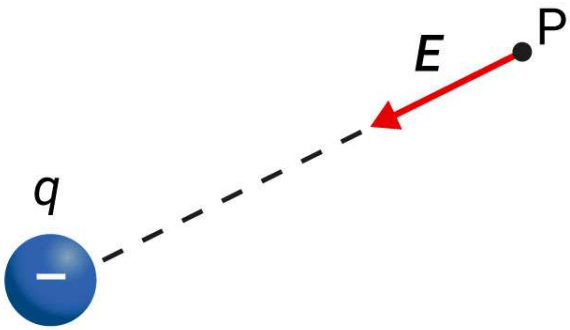








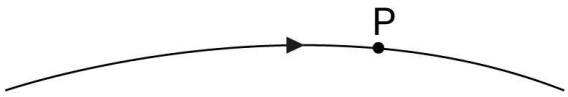


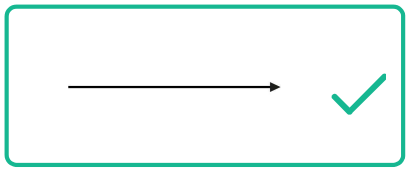


QUESTION 12

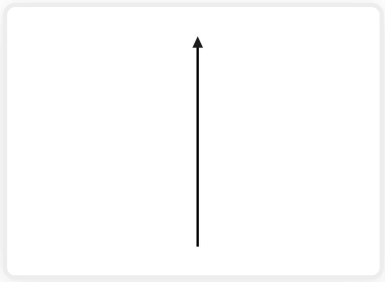
Drag and drop the correct answer in the blank below.

Khaled wants to draw the electric field at point P on an electric field line. The direction of the electric field at this point is





.



QUESTION 13

Select the correct answer.

A

+7.0 μC

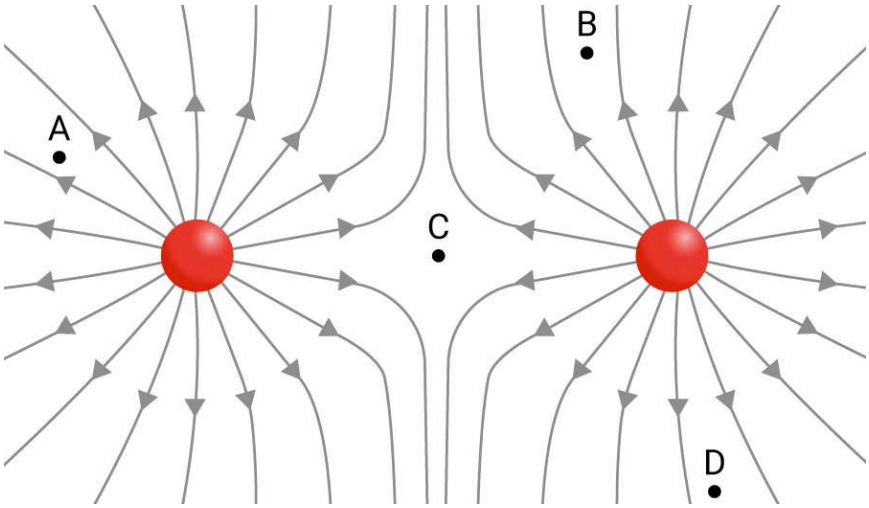
charged particle is placed 2.0 cm away from an unknown charged particle. Suppose that the electric field can be represented with 15 field lines flowing away from the positive charge. If 60 field lines flow into the unknown charged particle, what is its charge?

- ○ +28 μC
- ○ +1.8 μC
- ○ −1.8 μC

− 28 μC ✓

QUESTION 14

Select from the drop-down menu the correct answer.



The electric field lines between two charged objects are shown on the right. The charge of the object on the left is positive ✓, and the charge of the object on the right is positive ✓. The electric field is strongest at point A ✓, and weakest at point C ✓.

QUESTION 15

Select the correct answer.

What is true about the electric field vector,

$E(r)$

?

- The electric field vector is perpendicular to the electric field line at any point.
- The electric field vector is tangent to the electric field line at any point. ✓
- The electric field vector is opposite to the electric field line at any point.
- The electric field vector is at an angle to the electric field line at any point.