

## Question 15

Not yet answered

Marked out of 1.00

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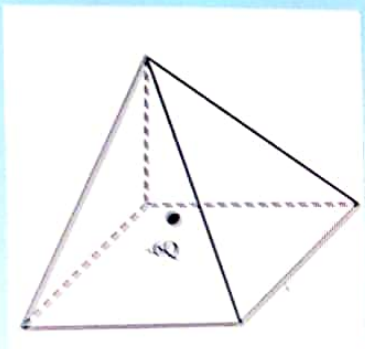
An electron with an initial velocity of  $4 \times 10^5 \text{ m/s}$  in x-direction enters a region; in which the electric field is  $400 \text{ N/C}$  in x-direction. What is the speed of the electron at 2 nanoseconds after it enters the electric field?

Select one:

- a.  $8 \times 10^5 \text{ m/s}$
- b.  $2.8 \times 10^5 \text{ m/s}$
- c.  $4.0 \times 10^5 \text{ m/s}$
- d.  $2.6 \times 10^5 \text{ m/s}$
- e.  $5.4 \times 10^5 \text{ m/s}$

Question 15  
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A charge  $q = -6Q$  rests inside a pyramid as shown in the figure below. The pyramid has a lateral base perimeter of  $a$  units and a lateral base height of  $b$  units. What is the total electric flux through the pyramid?



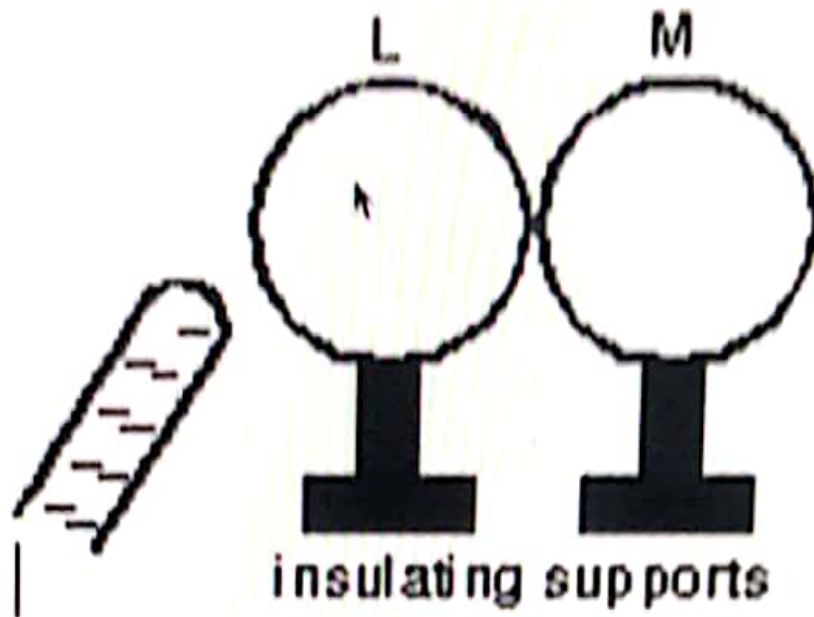
- Select one:
- $\Phi = \frac{-6Q}{\epsilon_0}$
  - $\Phi = -\frac{6Q}{\epsilon_0}$

Quiz navigation

1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16
17	18	19					

Find all answers  
Time left 0:27:48

Two uncharged metal spheres, L and M, are in contact. A negative charge is brought near them, as shown. The two spheres are slightly separated. What is the result?



Select one:

- a. L is positive and M is negative
- b. both spheres are neutral
- c. L is negative and M is positive
- d. both spheres are negative
- e. both spheres are positive

Clear my choice

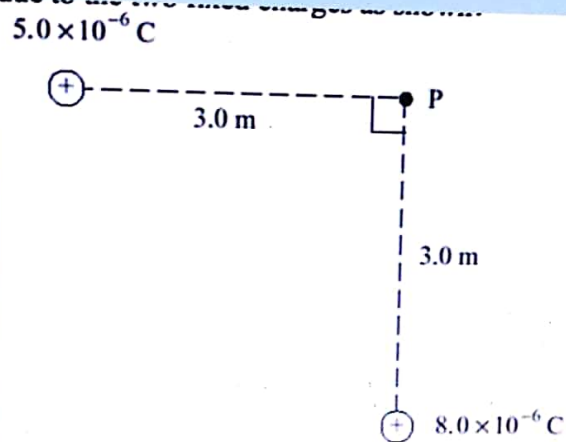


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What is the magnitude of the electric field at point P due to the two fixed charges as shown



Select one:

- a.  $9.4 \times 10^3 \text{ N/C}$
- b.  $1.3 \times 10^4 \text{ N/C}$
- c. None of these
- d.  $3.9 \times 10^4 \text{ N/C}$
- e.  $3.0 \times 10^3 \text{ N/C}$

Quiz nav

1	2
9	10
17	18

Finish attempt

Time left 0:13

Is it ever possible for the following process to occur?  $\gamma \rightarrow e^+ + e^- + e^+$

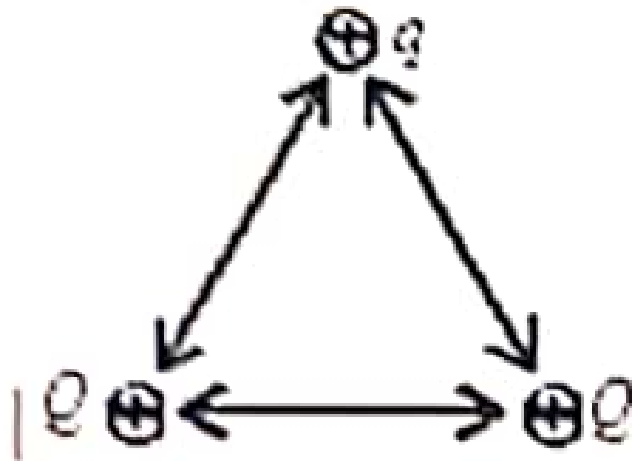
Select one:

- a. No, this process does not conserve momentum.
- b. No, this process does not conserve energy.
- c. Yes, it is.
- d. No, this process does not conserve mass.
- e. No, this process does not conserve electric charge.

Next

Jump to...

Two particles, each with charge  $Q$ , and a third particle, with a charge  $q$ , are placed at the vertices of an equilateral triangle as shown. The total force on the particle with charge  $q$  is:



Select one:

- a. Parallel to the bottom side of the triangle
- b. perpendicular to the left side of the triangle
- c. Parallel to the right side of the triangle
- d. Parallel to the left side of the triangle
- e. perpendicular to the bottom side of the triangle

ritaj.ps

Consider a line of charge of length  $L$  that has a linear charge density  $\lambda$  that is located on the  $x$  axis beginning at  $x = d$ . Which one of the following expressions allows one to calculate the electric field at the origin?

Select one:

a.  $E = \frac{\lambda}{4\pi\epsilon_0} \int_d^{d+L} \frac{dx}{x^2}$

b.  $E = \frac{\lambda}{4\pi\epsilon_0} \int_0^{d+L} \frac{dx}{x}$

c.  $E = \frac{\lambda}{4\pi\epsilon_0} \int_0^L \frac{dx}{x}$

d.  $E = \frac{\lambda}{4\pi\epsilon_0} \int_d^L \frac{dx}{x^2}$



Charge is distributed uniformly on the surface of a spherical nonconducting shell. A point particle with charge  $q$  is inside. The electrical force on the particle  $q$  is least when:

Select one:

- a. it is at the center of the shell
- b. all of the above (the force is zero everywhere inside)
- c. it is halfway between the shell center and the inside surface
- d. it is near the inside surface of the shell
- e. it is near, but not at, the center of the shell



Particle 1 with charge  $q_1$ , and particle 2, with a charge  $q_2$ , are on the x axis, with particle 1 at  $x = a$  and particle 2 at  $x = -2a$ . For the net force on a third charged particle, at the origin to be zero  $q_1$  and  $q_2$  must be related by  $q_2 =$ :

Select one:

- a.  $4q_1$
- b.  $-4q_1$
- c.  $-q_1/4$
- d.  $2q_1$
- e.  $-2q_1$

## Question 12

Not yet answered

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Two particles are separated by a distance  $d$ . Particle A has a charge  $+Q$  and particle B has a charge  $+3Q$ . At what distance from particle A along the line connecting particles A and B would you place a third charged particle such that no net electrostatic force acts on it?

Select one:

- a.  $d/2$
- b.  $d/9$
- c.  $d/3$
- d.  $d/4$
- e.  $d/6$

A coulomb is the same as:

Select one:

- a. an ampere . second
- b. an ampere/second
- c. half an ampere . *second*<sup>2</sup>
- d. an ampere / *meter*<sup>2</sup>
- e. a newton . *meter*<sup>2</sup>

A solid, conducting sphere of radius 4.0 cm has nonuniform volume charge distribution  $\rho$  that is a function of radial distance  $r$  from the center of the sphere:  $\rho = Ar^2$ . for  $A = -2 \mu\text{C}/\text{m}^4$ , what is the electric field at  $r=1.0$  cm

Select one:

- a. 3.6 N/C, Inward the sphere
- b. 5.6 N/C, outward the sphere
- c. 5.6 N/C, Inward the sphere
- d. Zero
- e. 3.6 N/C, outward the sphere

Question 18

Not yet answered

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Flag question

Two particles are separated by a distance  $d$ . Particle A has a charge  $+Q$  and particle B has a charge  $+3Q$ . At what distance from particle A along the line connecting particles A and B would you place a third charged particle such that no net electrostatic force acts on it?

Select one:

- a.  $d/9$
- b.  $d/6$
- c.  $d/3$
- d.  $d/2$
- e.  $d/4$

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A cylindrical wastepaper basket with a 0.15-m radius opening is in a uniform electric field of 300 N/C, perpendicular to the opening. The total flux through the sides and bottom is:

Select one:

- a. can't tell without knowing the areas of the sides and bottom
- b. 280 0 N.m<sup>2</sup>/C
- c. 21 0 N.m<sup>2</sup>/C
- d. 0 N.m<sup>2</sup>/C
- e. 4.2 0 N.m<sup>2</sup>/C

## Question 2

Not yet answered

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Three point charges are located on the xy plane as follows:  $Q_1 = 2.0 \mu\text{C}$  at  $y = 6.0\text{cm}$ ,  $Q_2 = 8.0 \mu\text{C}$  at  $x = 8.0\text{cm}$  and  $Q_3 = -8.0 \mu\text{C}$  at  $x = -8.0\text{cm}$ . What is the Electric field on  $Q_1$ ?

Select one:

- a.  $-1.15 \times 10^7 \text{ N/C}$  In x direction
- b.  $1.15 \times 10^7 \text{ N/C}$  In x direction
- c.  $-8.6 \times 10^6 \text{ N/C}$  In x direction
- d.  $6 \times 10^4 \text{ N/C}$  In x direction
- e.  $-8.6 \times 10^6 \text{ N/C}$  In y direction

## GENERAL PHYSICS 2-1193 -Meta

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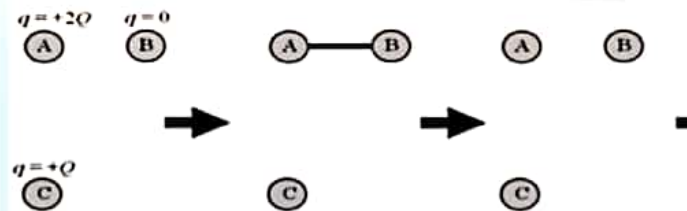
## Question 11

Not yet answered

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Flag question

Consider the conducting spheres labeled A, B, and C shown in the drawing. The spheres are initially charged as shown on the left, then wires are connected and disconnected in a sequence shown moving toward the right. What is the final charge on sphere C at the end of the sequence



Select one:

- a.  $+Q/3$   
 b.  $+3Q$   
 c.  $+Q/2$   
 d.  $+Q$   
 e.  $+2Q$

[Clear my choice](#)



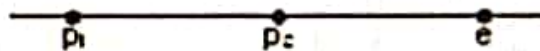
6. A negatively charged rubber rod is brought near the top disk of an electroscope, which has already been charged positive. The result is that

- a. electroscope indicator will move farther away from vertical,
- b. the rod will lose its charge,
- c. electroscope indicator will tend to go back to vertical,**
- d. electroscope will become discharged,
- e. nothing noticeable will happen.

7. Two identical charges, 2.0 m apart, exert forces of magnitude 4.0 N on each other. The value of either charge is

- a.  $1.8 \times 10^{-9} \text{ C}$ ,
- b.  $2.1 \times 10^{-5} \text{ C}$ ,
- c.  $4.2 \times 10^{-5} \text{ C}$ ,**
- d.  $1.9 \times 10^5 \text{ C}$ ,
- e.  $3.8 \times 10^5 \text{ C}$ .

8. Two protons ( $p_1$  and  $p_2$ ) and an electron ( $e$ ) lie on a straight line, as shown. The directions of the force of  $p_2$  on  $p_1$ , the force of  $e$  on  $p_1$ , and the total force on  $p_1$ , respectively, are



- a.  $\rightarrow, \leftarrow, \rightarrow$ ,
- b.  $\leftarrow, \rightarrow, \rightarrow$ ,
- c.  $\rightarrow, \leftarrow, \leftarrow$ ,
- d.  $\leftarrow, \rightarrow, \leftarrow$ ,**
- e.  $\leftarrow, \leftarrow, \leftarrow$ .

9. An electric field is most directly related to

- a. the momentum of a test charge,
- b. the kinetic energy of a test charge,
- c. the potential energy of a test charge,
- d. the force acting on a test charge,**
- e. the charge carried by a test charge.

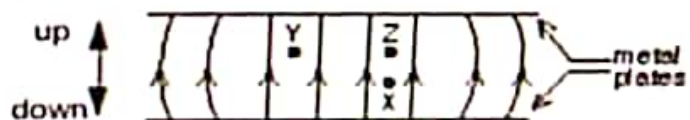
10. The units of the electric field are

- a.  $\text{N} \cdot \text{C}^2$ ,
- b.  $\text{C}/\text{N}$ ,
- c.  $\text{N}$ ,
- d.  $\text{N}/\text{C}$ ,**
- e.  $\text{C}/\text{m}^2$ .

11. Choose the correct statement(s) concerning electric field lines

- a. field lines may cross,
- b. field lines are close together where the field is large,**
- c. field lines point away from positive charges,**
- d. a point charge released from rest moves along a field line,
- e. none of these are correct.

12. The diagram shows the electric field lines due to two charged parallel metal plates. We conclude that



- a. the upper plate is**

A charged insulator can be discharged by passing it just above a flame. This is because the flame:

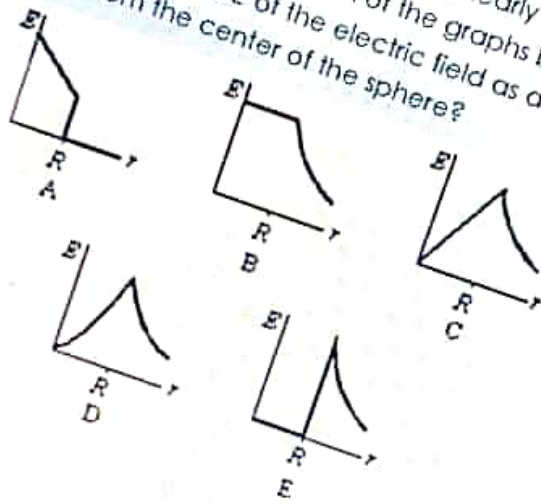
Select one:

- a. contains ions
- b. warms it
- c. contains carbon dioxide
- d. contains more rapidly moving atoms
- e. dries it

Question 2

Not yet answered  
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A solid insulating sphere of radius  $R$  contains a positive charge that is distributed with a volume charge density that does not depend on angle but does increase linearly with distance from the sphere center. Which of the graphs below correctly gives the magnitude  $E$  of the electric field as a function of the distance  $r$  from the center of the sphere?



Select one:

- a. D
- b. E
- c. C
- d. B
- e. A

An electron with an initial velocity of  $4 \times 10^5 \text{ m/s}$  in x-direction enters a region; in which the electric field is  $400 \text{ N/C}$  in x-direction. What is the speed of the electron at 2 nanoseconds after it enters the electric field?

Select one:

- a.  $8 \times 10^5 \text{ m/s}$
- b.  $2.6 \times 10^5 \text{ m/s}$
- c.  $5.4 \times 10^5 \text{ m/s}$
- d.  $2.8 \times 10^5 \text{ m/s}$
- e.  $4.0 \times 10^5 \text{ m/s}$

### Question 9

Not yet answered

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As used in the definition of electric field, a "test charge":

Select one:

- a. none of the above
- b. has zero charge
- c. has charge of magnitude  $1.6 \times 10^{-9}$  C
- d. must be a proton
- e. must be an electron

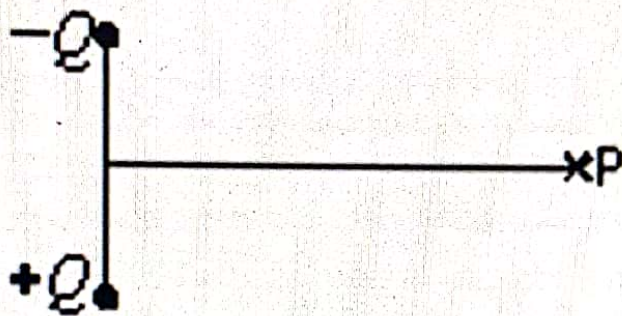
### Question 10

Not yet answered

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The diagram shows a particle with positive charge  $Q$  and a particle with negative charge  $wQ$ . The electric field at point  $P$  on the perpendicular bisector of the line joining them is:



Select one:

- a. right
- b. south
- c. North
- d. left
- e. zero

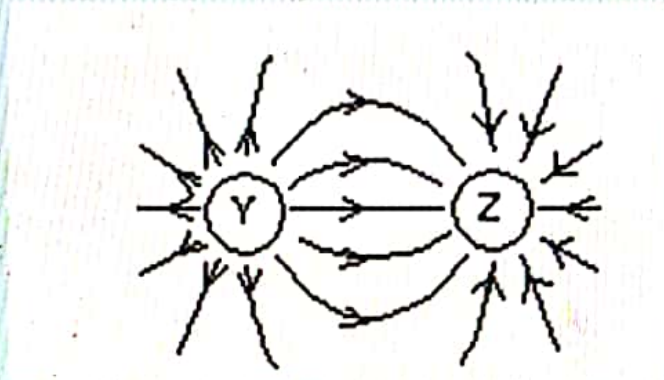
Question 2

Not yet answered

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The diagram shows the electric field lines in a region of space containing two small charged spheres (Y and Z). Then:



Select one:

- a. Y and Z must have the same sign
- b. The magnitude of the electric field is the same everywhere
- c. Y is negative and Z is positive
- d. Y is positive and Z is negative
- e. the electric field is strongest midway between Y and Z

Next page

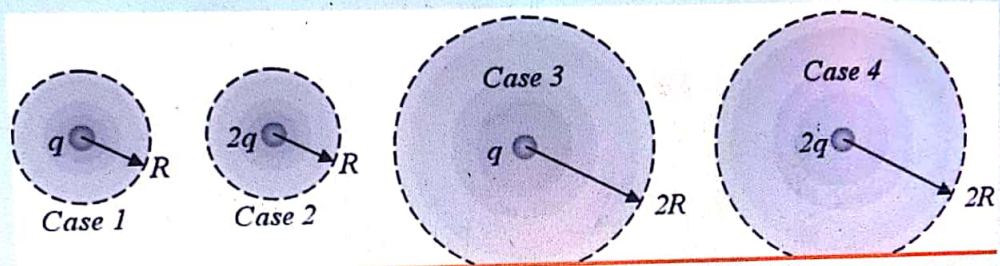
Question 2

Not yet answered

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Consider the five situations shown. Each one contains either a charge  $q$  or a charge  $2q$ . A Gaussian surface surrounds the charged particle in each case. Considering the electric flux through each of the Gaussian surfaces, which of the following comparative statements is correct



Select one:

- a.  $\Phi_3 = \Phi_4 > \Phi_2 = \Phi_1$
- b.  $\Phi_4 > \Phi_3 > \Phi_2 > \Phi_1$
- c.  $\Phi_1 = \Phi_3 > \Phi_2 = \Phi_4$
- d.  $\Phi_2 = \Phi_4 > \Phi_1 = \Phi_3$



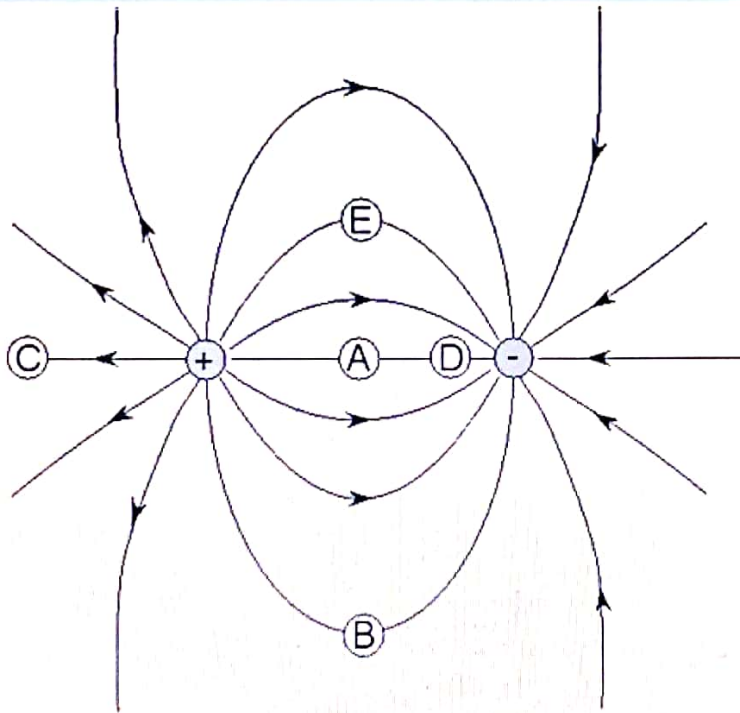
Question 18

Not yet answered

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A positively charged object is located to the left of a negatively charged object as shown. Electric field lines are shown connecting the two objects. The five points on the electric field lines are labeled A, B, C, D, and E. At which one of these points would a test charge experience the smallest force?



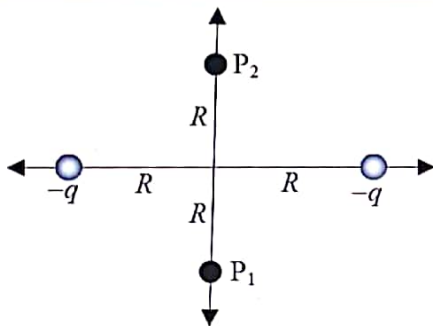
Question 18

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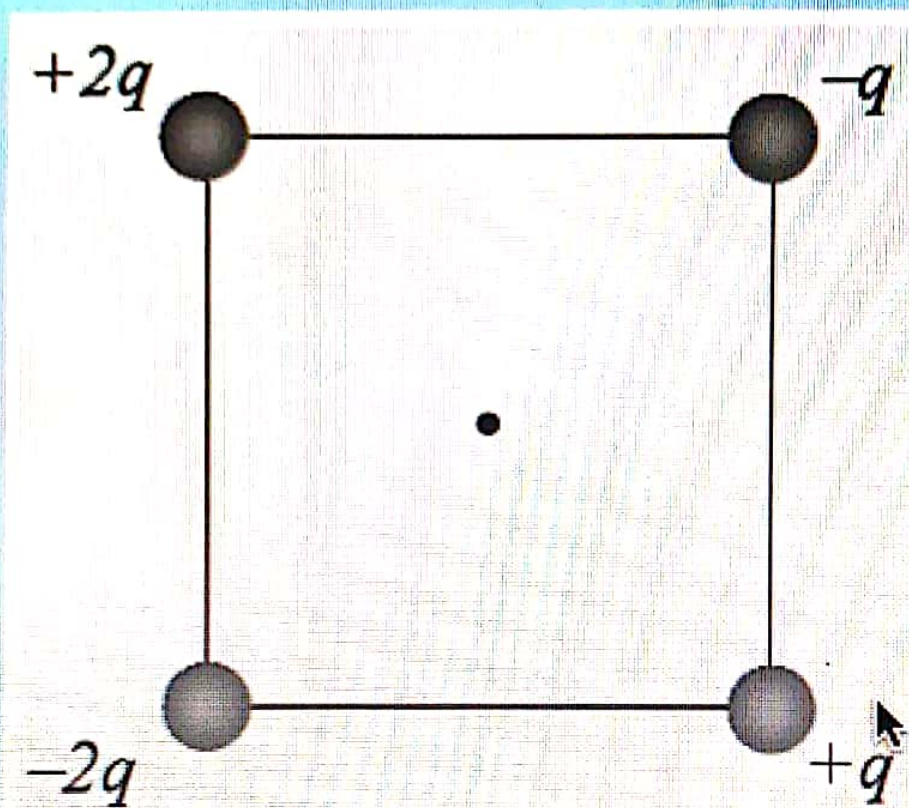
Two negatively-charged objects are located on the x axis, equally distant from the origin as shown. Consider the electric field at the point P1. How will that electric field change if a third object with a charge +q is placed at point P2? Note: the point P2 is the same distance from the origin as the point P1 and the magnitude of each of the charges is the same



Select one:

- a. The magnitude of the electric field will decrease by 25%.
- b. The magnitude of the electric field will decrease by 50%.

Four charges are located on the corners of a square as shown in the drawing. What is the direction of the net electric field at the point labeled P?



Select one:

- a. toward the middle of the right side of the square
- b. There is no direction. The electric field at P is zero N/C
- c. toward the lower right corner of the square
- d. toward the upper left corner of the square

A positively charged insulating rod is brought close to an object that is suspended by a string. If the object is repelled away from the rod we can conclude:

Select one:

- a. the object is negatively charged
- b. the object is an insulator
- c. none of the above
- d. the object is a conductor
- e. the object is positively charged

Question 17

Not yet answered

Marked out of 1.00

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Two particles have charges  $Q$  and  $-Q$  (equal magnitude and opposite sign). For a net force of zero to be exerted on a third charge it must be placed:

Select one:

- a. on the perpendicular bisector of the line joining  $Q$  and  $-Q$ , but not on that line itself
- b. at none of these places (there is no place)
- c. on the line joining  $Q$  and  $-Q$ , to the side of  $-Q$  opposite  $Q$
- d. on the line joining  $Q$  and  $-Q$ , to the side of  $Q$  opposite  $-Q$
- e. midway between  $Q$  and  $-Q$

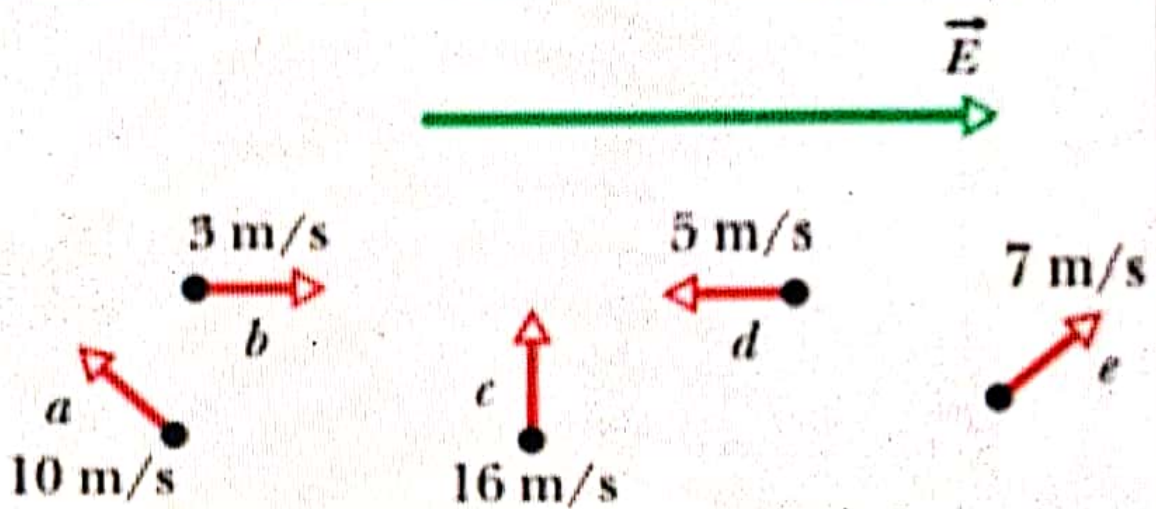
Quiz no

1	2
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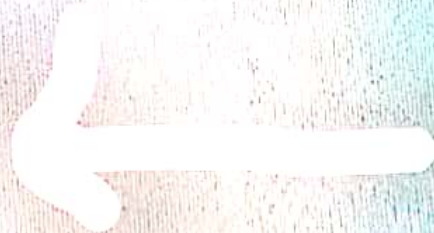
Time left 0:

The figure shows five protons that are launched in a uniform electric field; the magnitude and direction of the launch velocities are indicated. Rank the protons according to the magnitude of their accelerations due to the field, greatest first.



Select one:

- a. e,b,c=a,b
- b. b,e,d,e,a
- c. a=b,d,c,e
- d. a=b=c=d=e
- e. a=c=b=d, e



Three point charges are located on the xy plane as follows:  $Q_1 = 2.0 \mu\text{C}$  at  $y = 6.0\text{cm}$ ,  $Q_2 = 8.0 \mu\text{C}$  at  $x = 8.0\text{cm}$  and  $Q_3 = -8.0 \mu\text{C}$  at  $x = -8.0\text{cm}$ . What is the Electric field on  $Q_1$ ?

Select one:

- a.  $1.15 \times 10^7 \text{ N/C}$  In x direction
- b.  $-1.15 \times 10^7 \text{ N/C}$  In x direction
- c.  $-8.6 \times 10^6 \text{ N/C}$  In x direction
- d.  $6 \times 10^6 \text{ N/C}$  In x direction
- e.  $-8.6 \times 10^6 \text{ N/C}$  In y direction

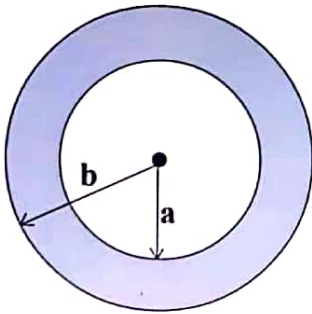
Question 12

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A net charge of  $+Q$  is transferred to a spherical conducting shell of inner radius  $a$  and outer radius  $b$ . A point charge  $-10q$  is placed in the center of the shell (as shown below). What is the charge density on the outside of the conducting shell:



Select one:

- a.  $\sigma = -10q/4\pi b^2$
- b.  $\sigma = (10q - Q)/4\pi b^2$
- c.  $\sigma = -Q/4\pi b^2$
- d.  $\sigma = (Q - 10q)/4\pi b^2$



A hollow conductor is positively charged. A small uncharged metal ball is lowered by a silk thread through a small opening in the top of the conductor and allowed to touch its inner surface. After the ball is removed, it will have:

Select one:

- a. a charge whose sign depends on what part of the inner surface it touched
- b. a negative charge
- c. a charge whose sign depends on where the small hole is located in the conductor
- d. no appreciable charge
- e. a positive charge

A physics instructor in an anteroom charges an electrostatic generator to  $25 \mu\text{C}$ , then carries it into the lecture hall. The net electric flux through the lecture hall walls is

:Select one

- a.  $2.8 \times 10^5 \text{ N}\cdot\text{m}^2/\text{C}$
- b.  $0 \text{ N}\cdot\text{m}^2/\text{C}$
- c.  $25 \times 10^{-6} \text{ N}\cdot\text{m}^2/\text{C}$
- d. can't tell unless the lecture hall dimensions are given  (i)
- e.  $2.2 \times 10^5 \text{ N}\cdot\text{m}^2/\text{C}$

Finish stamp



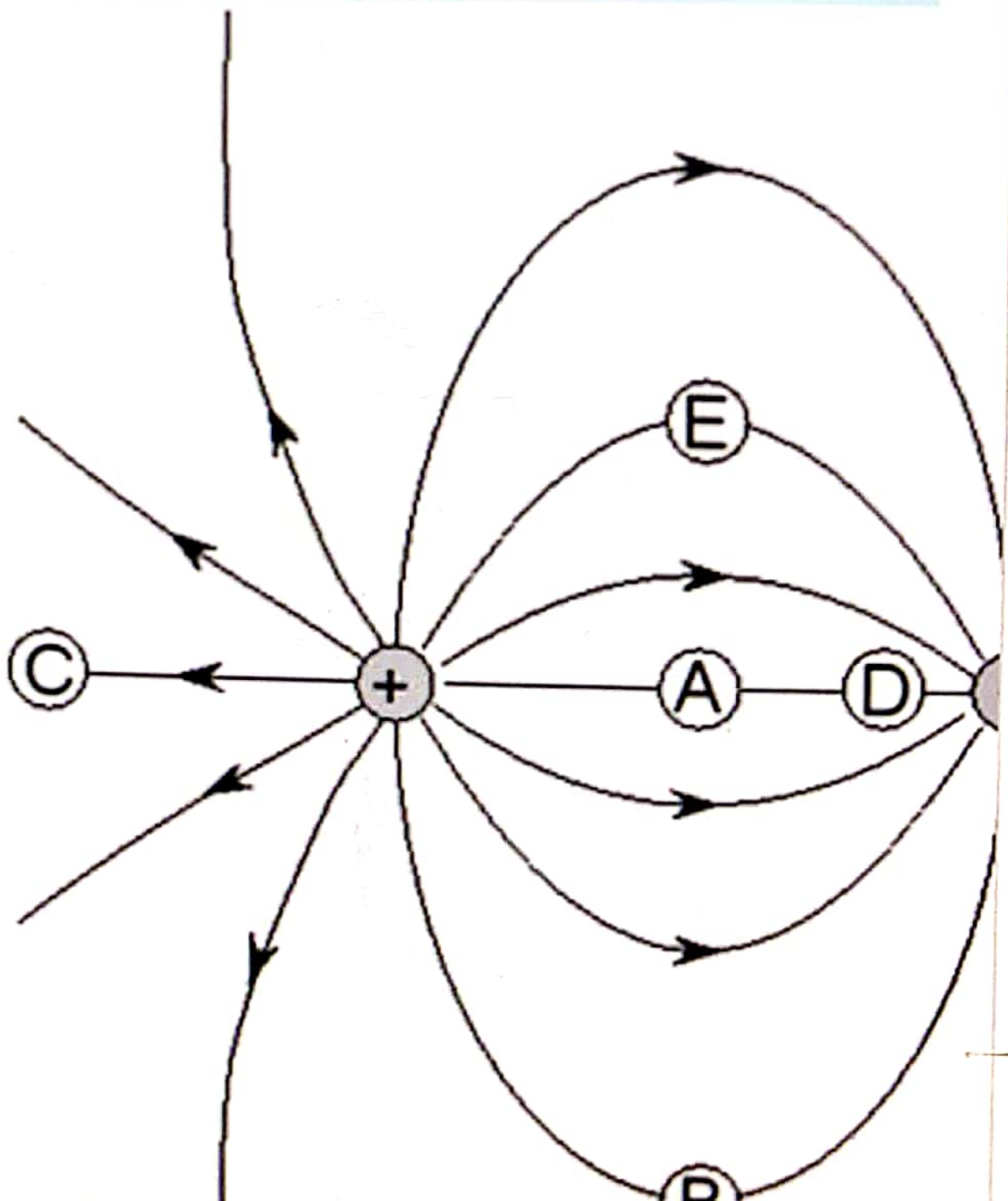
The diagram shows the electric field lines in a region of space containing two small charged spheres (Y and Z). Then:

Select one:

- a. Y and Z must have the same sign
- b. Y is negative and Z is positive
- c. The magnitude of the electric field is the same everywhere
- d. Y is positive and Z is negative
- e. the electric field is strongest midway between Y and Z

Positive charge  $Q$  is placed on a conducting spherical shell with inner radius  $R_1$  and outer radius  $R_2$ . A point charge  $q$  is placed at the center of the cavity. The magnitude of the

A positively charged object is located to the left of a negatively charged object as shown. Electric field lines are shown connecting the two objects. The five points on the electric field lines are labeled A, B, C, D, and E. At which one of these points would a test charge experience the smallest force?



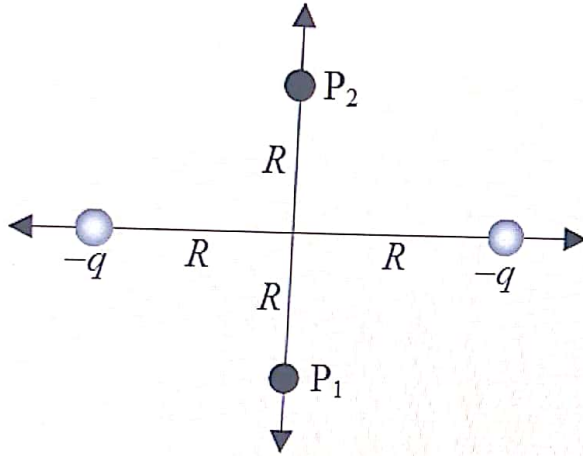
Question 17

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Two negatively-charged objects are located on the x axis, equally distant from the origin as shown. Consider the electric field at the point P1. How will that electric field change if a third object with a charge +q is placed at point P2? Note: the point P2 is the same distance from the origin as the point P1 and the magnitude of each of the charges is the same



Select one:

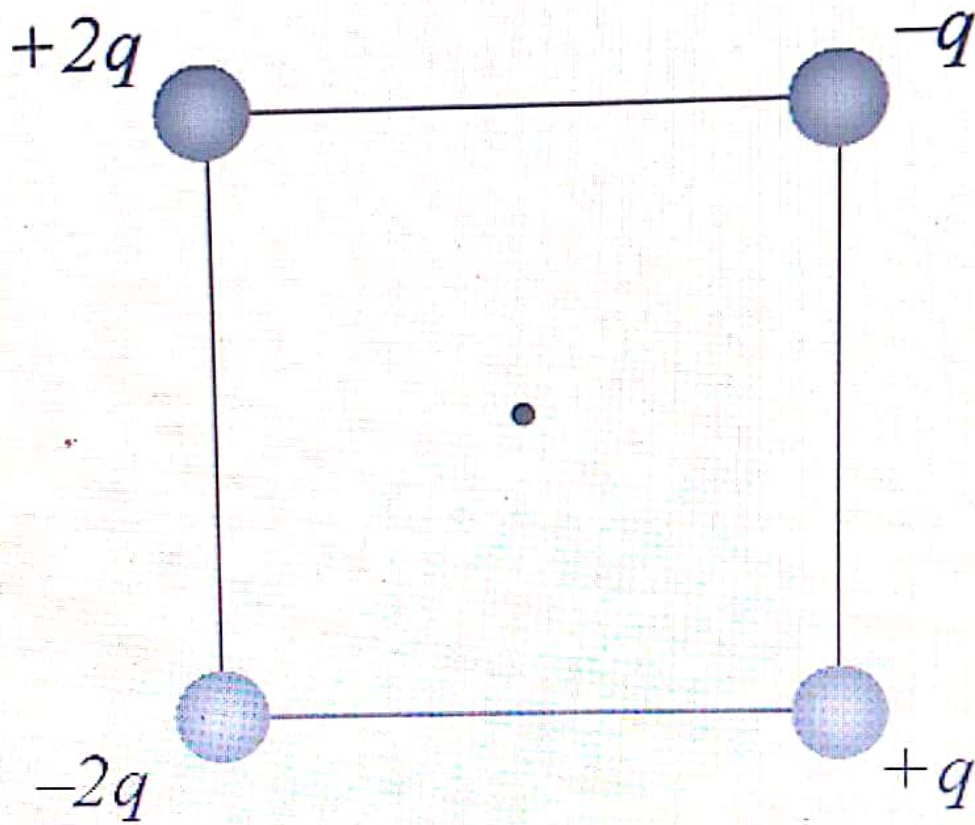
- a. The magnitude of the electric field will increase by 25%.

A 3.5-cm radius hemisphere contains a total charge of  $6.6 \times 10^{-7}$  C. The flux through the rounded portion of the surface is  $9.8 \times 10^4$  N.m<sup>2</sup>/C. The flux through the flat base is:

Select one:

- a.  $2.3 \times 10^4$  N.m<sup>2</sup>/C
- b.  $-9.8 \times 10^4$  N.m<sup>2</sup>/C
- c. 0 N.m<sup>2</sup>/C
- d.  $-2.3 \times 10^4$  N.m<sup>2</sup>/C
- e.  $9.8 \times 10^4$  N.m<sup>2</sup>/C

Four charges are located on the corners of a square as shown in the drawing. What is the direction of the net electric field at the point labeled P?



Select one:

- a. toward the upper left corner of the square
- b. There is no direction. The electric field at P is zero N/C
- c. toward the lower right corner



At a distance of one centimeter from an electron, the electric field strength has a value  $E$ . At what distance is the electric field strength equal to  $E/2$ ?

Select one:

- a. 3.2 cm
- b. 0.5 cm
- c. 4.0 cm
- d. 1.4 cm
- e. 2.0 cm

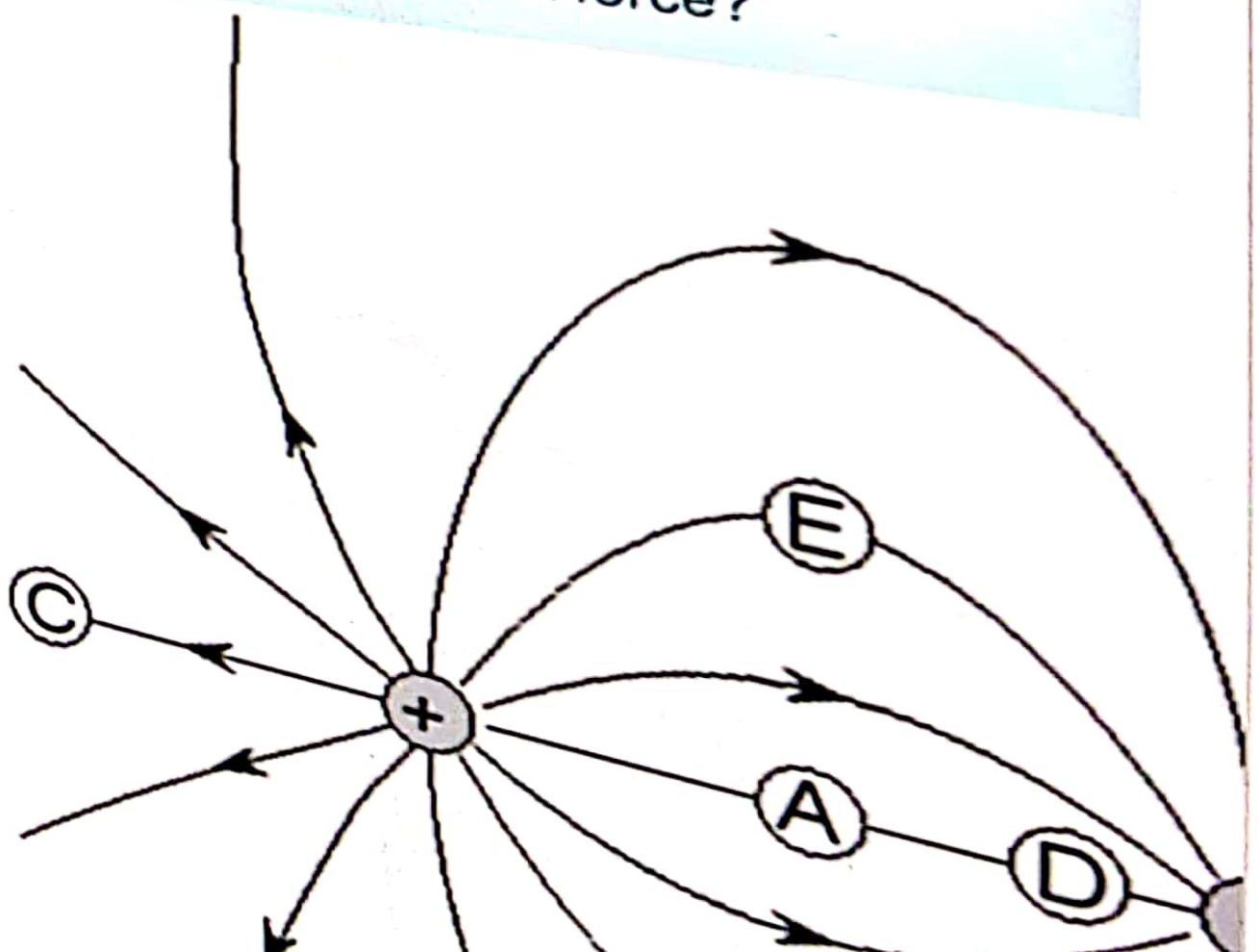


Charge is distributed uniformly throughout the volume of an infinitely long solid cylinder of radius  $R$ , what is the electric field when  $r < R$

Select one:

- a.  $E = \rho r / 2\epsilon$
- b. Zero
- c.  $E = \rho r^2 / 2\epsilon$
- d.  $E = \rho R / 2\epsilon$
- e.  $E = \rho R^2 / 2\epsilon$

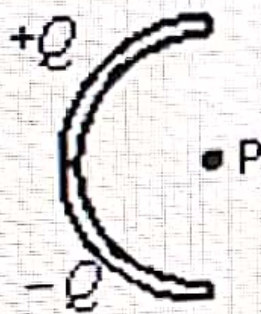
A positively charged object is located to the left of a negatively charged object as shown. Electric field lines are shown connecting the two objects. The five points on the electric field lines are labeled A, B, C, D, and E. At which one of these points would a test charge experience the smallest force?



Question 16

Not yet answered  
Marked out of 1.00  
Flag question

Positive charge  $+Q$  is uniformly distributed on the upper half and negative charge  $-Q$  is uniformly distributed on the lower half. What is the direction of the electric field at point  $P$ , the center of the semicircle?



Select one:

- a. North
- b. west
- c. south
- d. east

[Clear my choice](#)

Question 19

Not yet answered

Marked out of 1.00

Flag question

Positive charge  $Q$  is placed on a conducting spherical shell with inner radius  $R_1$  and outer radius  $R_2$ . The electric field at a point  $r < R_1$  is:

Select one:

- a.  $kq/8r$
- b.  $KQ/r^2$
- c.  $KQ/R_1^2$
- d.  $KQ/(R_1^2 - r^2)$
- e. 0

Finish attempt ...

Quiz navigation

1	2	3	4	5	6	7
9	10	11	12	13	14	15
17	18	19				

Finish attempt ...

Time left 0:05:47

A point particle with charge  $q$  is placed inside a cube but not at its center. The electric flux through any one side of the cube:

Select one:

- a. is zero
- b. is  $q/6\epsilon$
- c. is  $q/\epsilon$
- d. is  $q/4\epsilon$
- e. cannot be computed using Gauss' law

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Question 19

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The units of the electric field are:

Select one:

- a. JJC
- b. J/(C/m)
- c. J/m
- d. J/C
- e. none of these



Positive charge  $Q$  is placed on a conducting spherical shell with inner radius  $R_1$  and outer radius  $R_2$ . A point charge  $q$  is placed at the center of the cavity. The magnitude of the electric field at a point in the interior of the conductor a distance  $r$  from the center is:

Select one:

- a. 0
- b.  $kq/r^2$
- c.  $kQ+q/r^2$
- d.  $kQ/R_1^2$
- e.  $kQ/R_2^2$

Charge is distributed uniformly on the surface of a spherical nonconducting shell. A point particle with charge  $q$  is inside. The electrical force on the particle  $q$  is least when:

Select one:



- a. it is halfway between the shell center and the inside surface
- b. it is near the inside surface of the shell
- c. all of the above (the force is zero everywhere inside)
- d. it is near, but not at, the center of the shell
- e. it is at the center of the shell



Positive charge  $Q$  is placed on a conducting spherical shell with inner radius  $R_1$  and outer radius  $R_2$ . A point charge  $q$  is placed at the center of the cavity. The magnitude of the electric field at a point in the interior of the conductor a distance  $r$  from the center is:

Select one:

- a.  $kQ+q/r^2$
- b. 0
- c.  $kQ/R_1^2$
- d.  $kq/r^2$
- e.  $kQ/R_2^2$

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Topic 2

Topic 3

Topic 4

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Question 15

Not yet answered

Marked out of 1.00

Flag question

A total charge of  $-6.50 \mu\text{C}$  is uniformly distributed within a sphere that has a radius of  $0.150 \text{ m}$ . What is the magnitude and direction of the electric field at  $0.300 \text{ m}$  from the surface of the sphere?

Select one:

- a.  $2.89 \times 10^5 \text{ N/C}$ , radially inward
- b.  $6.49 \times 10^5 \text{ N/C}$ , radially outward
- c.  $9.38 \times 10^5 \text{ N/C}$ , radially outward
- d.  $1.30 \times 10^6 \text{ N/C}$ , radially inward
- e. zero

Question 19  
Not yet answered  
Marked out of 1.00  
Flag question

Positive charge  $Q$  is placed on a conducting spherical shell with inner radius  $R_1$  and outer radius  $R_2$ . The electric field at a point  $r < R_1$  is:

Select one:

- a.  $kq/8r$
- b.  $KQ/r^2$
- c.  $KQ/R_1^2$
- d.  $KQ/(R_1^2 - r^2)$
- e. 0

Charge is distributed uniformly throughout the volume of an infinitely long solid cylinder of radius  $R$ , what is the electric field when  $r < R$

Select one:

a.  $E = \rho R^2 / 2\epsilon$

b.  $E = \rho R / 2\epsilon$

c.  $E = \rho r / 2\epsilon$

d. Zero

e.  $E = \rho r^2 / 2\epsilon$

Question 17

Not yet answered

Marked out of 1.00

Flag question

A conducting sphere of radius 5.0 cm carries a net charge of  $7.5 \mu\text{C}$ . What is the surface charge density on the sphere?

Select one:

- a.  $2.4 \times 10^{-2} \text{ C/m}^2$
- b.  $9.5 \times 10^{-4} \text{ C/m}^2$
- c.  $1.4 \times 10^{-2} \text{ C/m}^2$
- d.  $6.0 \times 10^{-5} \text{ C/m}^2$
- e.  $2.4 \times 10^{-4} \text{ C/m}^2$

[Clear my choice](#)

Quiz navig

1	2	3
9	10	11
17	18	19

Finish attempt

Time left 0:14

Charge is distributed uniformly on the surface of a spherical nonconducting shell. A point particle with charge  $q$  is inside. The electrical force on the particle  $q$  is least when:

Select one:



- a. it is halfway between the shell center and the inside surface
- b. it is near the inside surface of the shell
- c. all of the above (the force is zero everywhere inside)
- d. it is near, but not at, the center of the shell
- e. it is at the center of the shell

GENERAL PHYSICS 2-  
1193 -Meta

Badges

Competencies

Grades

General

Topic 1

Topic 2

Topic 3

Topic 4

Topic 5

Topic 6

Topic 7

Question 9

Not yet answered

Marked out of 1.00

Flag question

Charge is distributed uniformly on the surface of a spherical nonconducting shell. A point particle with charge  $q$  is inside. The electrical force on the particle  $q$  is least when:

Select one:

- a. it is near, but not at, the center of the shell
- b. it is near the inside surface of the shell
- c. it is halfway between the shell center and the inside surface
- d. all of the above (the force is zero everywhere inside)
- e. it is at the center of the shell

Question 10

Not yet answered

Marked out of 1.00

Flag question

A charge of  $-2e$  is located at the origin and a charge  $+2e$  is located on the  $y$  axis at  $y = 1.00\mu\text{m}$ . It is in an electric field of strength  $3 \times 10^5 \text{N/C}$  in positive  $x$  direction. Calculate the magnitude of the torque on the dipole?

Select one:

- a.  $9.6 \times 10^{-20} \text{N}\cdot\text{m}$

Quiz navigation

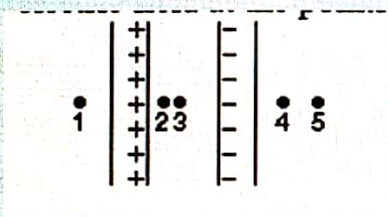
1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16
17	18	19					

Finish attempt ...

Time left 0:21:06

Two large conducting parallel plates carry charge of equal magnitude, one positive and the other negative, that is distributed uniformly over their inner surfaces. Rank the points 1 through 5 according to the magnitude of the electric field at the points, least to greatest.

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Select one:

- a. 2 and 3 tie, then 1 and 4 tie, then 5
- b. 2 and 3 tie, then 1 and 4 and 5 tie
- c. 1, 2, 3, 4, 5
- d. 1 and 4 and 5 tie, then 2 and 3 tie
- e. 5, 4, 3, 2, 1



Can an object carry a charge of  $2.0 \times 10^{-19} \text{ C}$ ?

Select one:

- a. No, because charge is quantized
- b. Yes, if the object has electrons or protons.
- c. Yes, if the object is an insulator.
- d. Yes, if the object is a conductor
- e. No, because objects do not have charge

Question 18

Not yet answered

Marked out of 1.00

Flag question

Two particles are separated by a distance  $d$ . Particle A has a charge  $+Q$  and particle B has a charge  $+3Q$ . At what distance from particle A along the line connecting particles A and B would you place a third charged particle such that no net electrostatic force acts on it?

Select one:

- a.  $d/9$
- b.  $d/3$
- c.  $d/4$
- d.  $d/2$
- e.  $d/6$

Next page



**Question 17**

Not yet answered

Marked out of 1.00

Flag question

Three point charges are located on the xy plane as follows:  $Q_1 = 2.0 \mu\text{C}$  at  $y = 6.0\text{cm}$ ,  $Q_2 = 8.0 \mu\text{C}$  at  $x = 8.0\text{cm}$  and  $Q_3 = -8.0 \mu\text{C}$  at  $x = -8.0\text{cm}$ . What is the Electric field on  $Q_1$ ?

Select one:

- a.  $-1.15 \times 10^7 \text{ N/C}$  In x direction
- b.  $1.15 \times 10^7 \text{ N/C}$  In x direction
- c.  $-8.6 \times 10^6 \text{ N/C}$  In x direction
- d.  $6 \times 10^4 \text{ N/C}$  In x direction
- e.  $-8.6 \times 10^6 \text{ N/C}$  In y direction

**Question 18**

Not yet answered

Marked out of 1.00

Flag question

Two particles, X and Y, are 4 m apart. X has a charge of  $2Q$  and Y has a charge of  $Q$ . The force of X on Y:

Select one:

- a. has half the magnitude of the force of Y on X
- b. has four times the magnitude of the force of Y on X
- c. has twice the magnitude of the force of Y on X
- d. has one-fourth the magnitude of the force of Y on X
- e. has the same magnitude as the force of Y on X

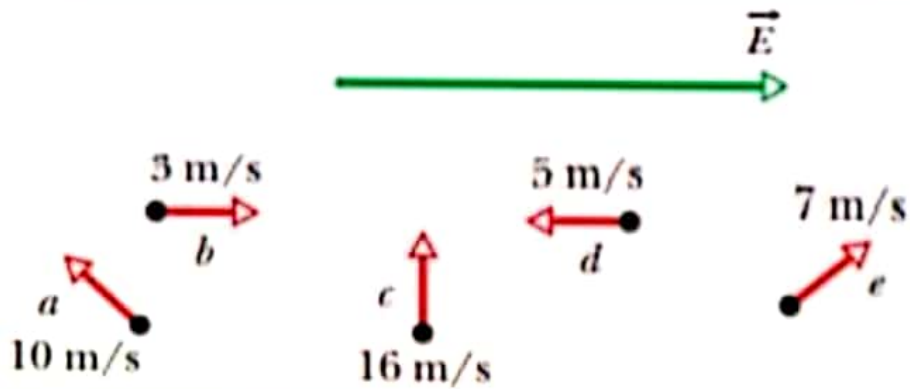
**Quiz navigation**

1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16
17	18	19					

Finish attempt ...

Time left 0:06:48

The figure shows five protons that are launched in a uniform electric field ; the magnitude and direction of the launch velocities are indicated. Rank the protons according to the magnitude of their accelerations due to the field, greatest first



Select one:

- a. a=b,d,c,e
- b. a=b=c=d=e
- c. b,e,d,e,a
- d. a=c=b=d, e
- e. e,b,c=a,b

Next page

Charge is distributed uniformly on the surface of a spherical nonconducting shell. A point particle with charge  $q$  is inside. The electrical force on the particle  $q$  is least when:

Select one:



- a. it is halfway between the shell center and the inside surface
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GENERAL PHYSICS 2-  
1193 -Meta

Badges

Competencies

Grades

General

Topic 1

Topic 2

Topic 3

Topic 4

Topic 5

Topic 6

Topic 7

Question 9

Not yet answered

Marked out of 1.00

Flag question

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Select one:

- a. it is near, but not at, the center of the shell
- b. it is near the inside surface of the shell
- c. it is halfway between the shell center and the inside surface
- d. all of the above (the force is zero everywhere inside)
- e. it is at the center of the shell

Question 10

Not yet answered

Marked out of 1.00

Flag question

A charge of  $-2e$  is located at the origin and a charge  $+2e$  is located on the  $y$  axis at  $y = 1.00\mu\text{m}$ . It is in an electric field of strength  $3 \times 10^5 \text{N/C}$  in positive  $x$  direction. Calculate the magnitude of the torque on the dipole?

Select one:

- a.  $9.6 \times 10^{-20} \text{N}\cdot\text{m}$

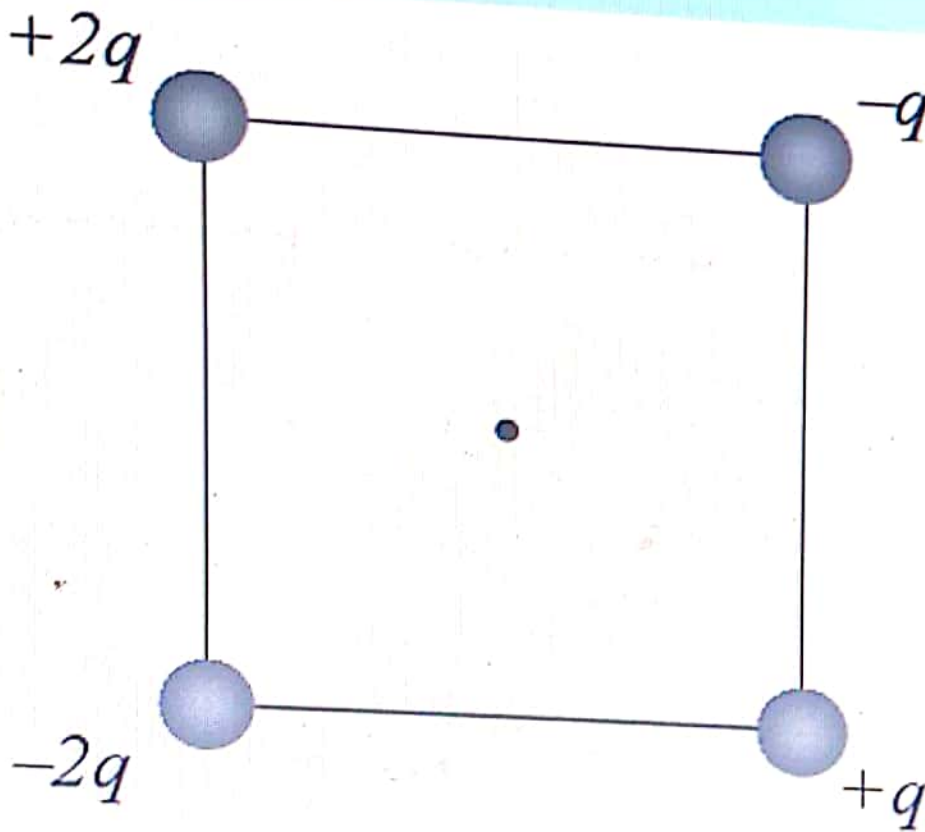
Quiz navigation

1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16
17	18	19					

Finish attempt ...

Time left 0:21:06

Four charges are located on the corners of a square as shown in the drawing. What is the direction of the net electric field at the point labeled P?



Select one:

- a. toward the upper left corner of the square
- b. There is no direction. The electric field at P is zero N/C
- c. toward the lower right corner of the square
- d.