KEY

First Name:_____ Last Name:_____

L07 – FQ – Electric Fields 2

Use the following information to answer Q1:

Electric Fields due to Point Charges

Diagram #1

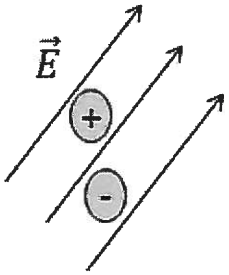
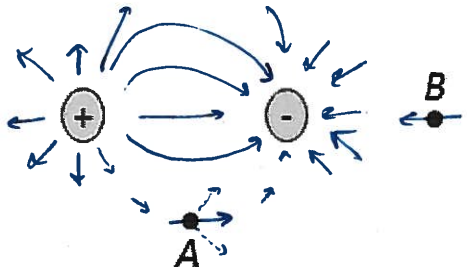
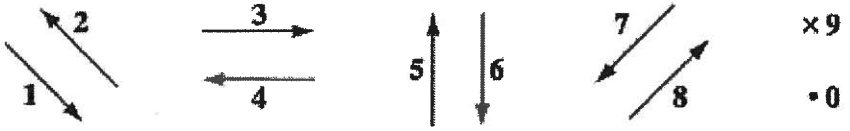


Diagram #2



Directions



Q1: Use the vector directions above to fill in the blanks below.

	↗	↙	→	←
Direction:	8	7	3	4
Description:	**Direction of force acting on positive charge in Diagram #1**	**Direction of force acting on negative charge in Diagram #1**	**Direction of electric field lines at *Point A* in Diagram #2**	**Direction of electric field lines at *Point B* in Diagram #2**

*(Record your **three-digit** answer in the Numerical Response boxes below)*

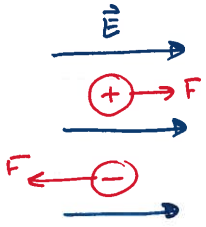
8	7	3	4

KEY

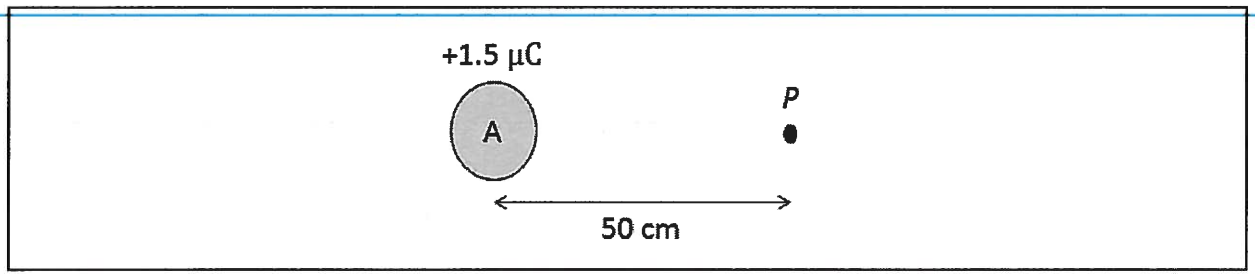
Q2: A positive charge moves __*i*__ the electric field lines and a negative charge moves __*ii*__ the electric field lines.

with / against

	i.	*ii.*
A.	with	with
B.	with	against
C.	against	with
D.	against	against



Use the following information to answer Q3-Q4:



Q3: The electric field strength at *Point P* is

a. 5.394×10^{1} N/C
b. 2.697×10^{2} N/C
c. 2.697×10^{4} N/C
d. 5.394×10^{4} N/C

$\vec{E} = \frac{kq}{r^2} = \frac{(8.99\times10^{9})(1.5\times10^{-6})}{(0.5)^2} = 5.394\times10^{4}\ N/C$

Q4: If a charge of -2.5 μC were placed at *Point P*, then the electrostatic force acting on it would be

a. 1.35×10^{-5} N [Right]
b. 1.35×10^{-5} N [Left]
c. 1.35×10^{-1} N [Right]
d. 1.35×10^{-1} N [Left]

$F = \frac{kq_1q_2}{r^2}$ ⇓ $F = |\vec{E}|q$

$\vec{E} = \frac{F}{q}$ ⇓ $F = q|\vec{E}|$

$F = (5.394\times10^{4})(2.5\times10^{-6})$

$F = 0.13485\ N$

$F = 1.35\times10^{-1}\ N$ [left]

Moves against field lines.
or
Attracted to positive charge

MARKING:

Beginning	0.0 – 1.5
Progressing	2.0 – 2.5
Competent	3.0 – 3.5
Exemplary	4.0