CheckPoint

Compare the magnitude of the net force on q in the two cases.

A) $|F_1| > |F_2|$

B) $|F_1| = |F_2|$

C) $|F_1| < |F_2|$

D) Depends on sign of q

$+Q$

q

F_1

$-Q$

$+Q$

q

$F_2 = 0$

$+Q$

Compare Forces: Question 1 (N = 760)

% of Students

71.8

7.6

13.9

6.6

A   B   C   D

"In case 1, no matter the sign of q the force on q from +Q and -Q will act in the same direction. Whereas in Case 2 the direction of the force of q from +Q and -Q act in opposite directions (cancel each other out). Therefore the magnitude of case 1 is bigger."

"The magnitudes of the forces are the same because the magnitudes of the charges are the same."

"In case 2 the symmetry cancels out all force on q."

"You have to know the charge of q because the middle charge is what will determine the force of the whole system"