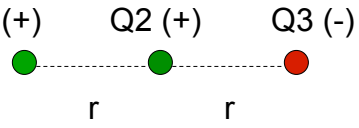
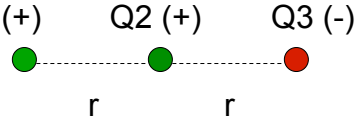
3 charges, Q1, Q2, and Q3 are in a line as shown



The signs are shown, but you do NOT know their magnitudes.
The net force on **Q2** is to the

A: Right B: Left
C: Don't know/ not enough information.

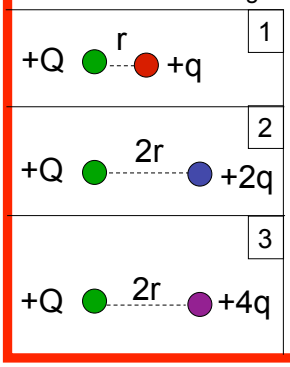
3 charges, Q1, Q2, and Q3 are in a line as shown



The signs are shown, but you do NOT know their magnitudes.
The net force on **Q1** is to the

A: Right B: Left
C: Don't know/ not enough information.

Consider the following situations, labeled 1, 2 & 3



Which charge (+Q) feels the largest force?

A) +q (situation 1)
B) +2q (sit. 2)
C) +4q (sit. 3)
D) two of them tie for largest force.
E) other/not sure

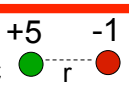
The smallest force?

Two protons are near each other. Each feels an electrostatic repulsion of magnitude F_{elec} and a gravitational attraction of magnitude F_{grav}, due to the other proton.

As the charges are moved apart, the ratio $\frac{F_{elec}}{F_{grav}}$ …

A) Increases
B) Decreases
C) Remains constant

2 identical charged metal balls have charges +5 mC and -1 mC



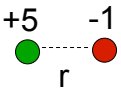
They **each** feel a force of magnitude F

Now bring them together so they *touch,* then move 'em back to their original positions.

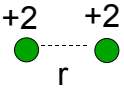
What is the charge on each one now?

A: Same as before.
B: They swap: the first becomes -1 mC , the 2nd becomes +5 mC
C: +3 mC on each.
D: +2 mC on each.
E: Not sure/not enough information

Before:



Now:



What is the magnitude of the new force they feel?

A: still F B: 5 F
C: 4/5 F D: 1/5 F
E: Don't know/can't tell.

An "electric dipole" (+Q and –Q separated by a small distance s) is placed along the x-axis:

A NEGATIVE test charge –q is placed to the right of the dipole.
The test charge feels a force that is

A) 0 B) → C) ← D) other

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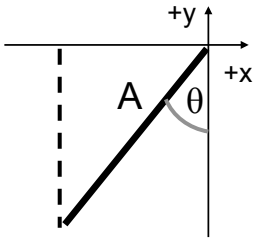
The solid line has length A and makes an angle θ with the negative y-axis.
What is the length of the dashed line?



A: A cos θ

B: A sinθ

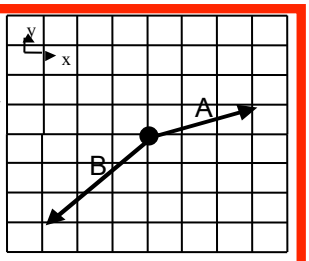
C: A tanθ

D: sinθ /A

E: cosθ /A

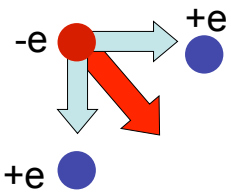
Two vectors **A** and **B** are shown. Consider the vector sum **C** = **A**+**B**.

What is Cy, the y-component of **C**?



A: 3 B: 2 C: -2 D: -4
E: None of these/not sure

What is the magnitude of the NET force on the electron?



A) $|\vec{F}| = k\frac{e^2}{r^2}$

B) $|\vec{F}| = 2k\frac{e^2}{r^2}$

C) $|\vec{F}| = \sqrt{2}k\frac{e^2}{r^2}$

D) Something else

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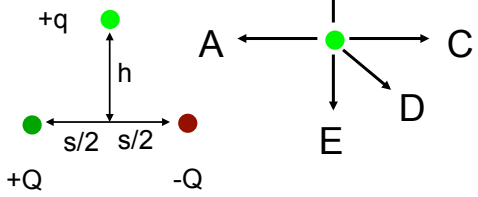
Consider the charge configuration shown below left. What is the direction of the net force on the +q charge?



Consider the charge configuration shown below left. What is the direction of the net force on the -q charge?