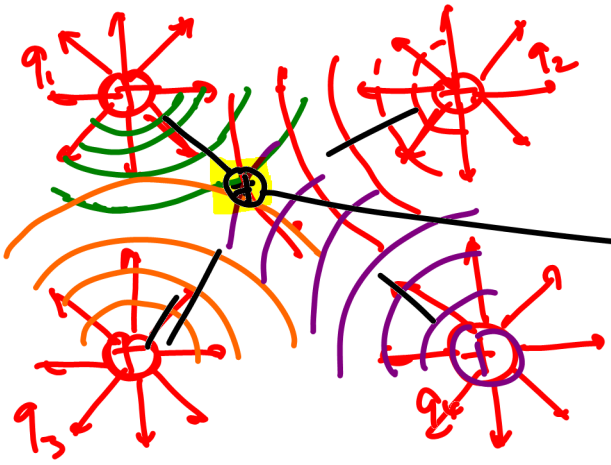


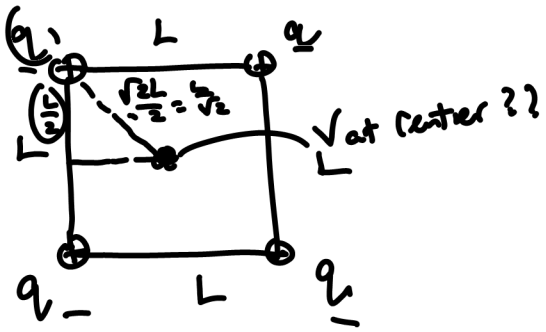

potential at the location.

$$V = V_1 + V_2 + V_3 + V_4$$

$$= \frac{kq_1}{r_1} + \frac{kq_2}{r_2} + \frac{kq_3}{r_3} + \frac{kq_4}{r_4}$$

$U_q = qV$

↑ potential energy when I put a charge at that location.




$$V = \frac{\sqrt{2}kq}{L} + \_\_ + \_\_ + \_\_ = \frac{4\sqrt{2}kq}{L}$$

Same

$U_q = qV$

↑ additional potential energy when I put a charge at that location

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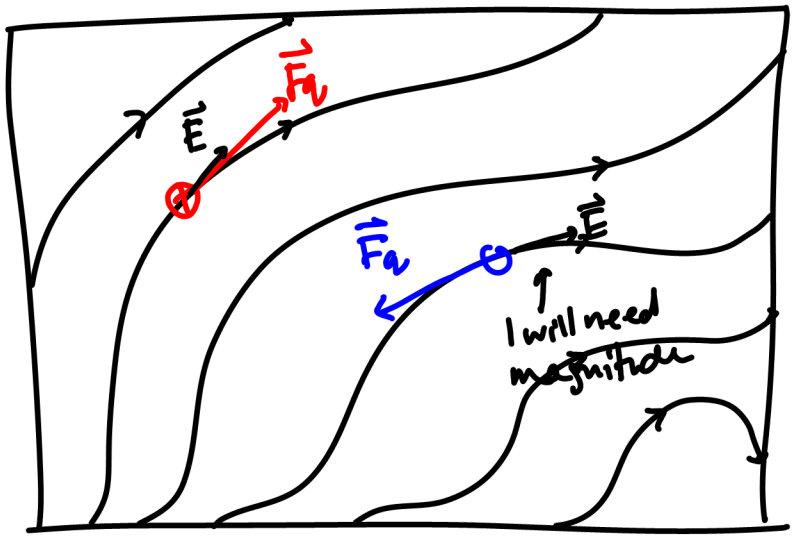


## Electric field lines

1. I do not have to know where these lines came from (single charge? discrete charges? charge distribution?)
2. All I need to know is that the electrostatic force will be either along the direction of E or opposite.