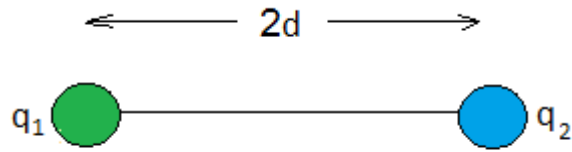


Answer on Question #64313, Physics / Electromagnetism

Two charges q_1 and q_2 are separated by a distance d . if the distance is doubled the electric potential is?

Solution:



$$\varphi = k q / r$$

Where $r = d$

$$\Sigma\varphi = \varphi_1 + \varphi_2$$

When $d = 2d$

We have

$$\varphi_1 = k q_1 / 2d$$

$$\varphi_2 = k q_2 / 2d$$

$$\Sigma\varphi = k q_1 / 2d + k q_2 / 2d = k / 2d (q_1 + q_2)$$

Answer: potential is reduced by half