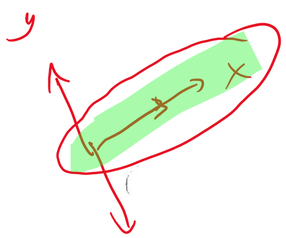
the calculation.)

••17 GO In Fig. 24-33, what is the net electric potential at point $P$ due to the four particles if $V = 0$ at infinity, $q = 5.00$ fC, and $d = 4.00$ cm?



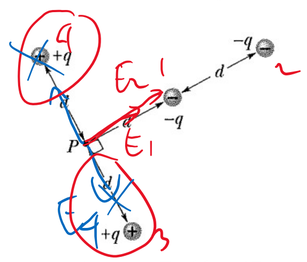




**Fig. 24-33** Problem 17.

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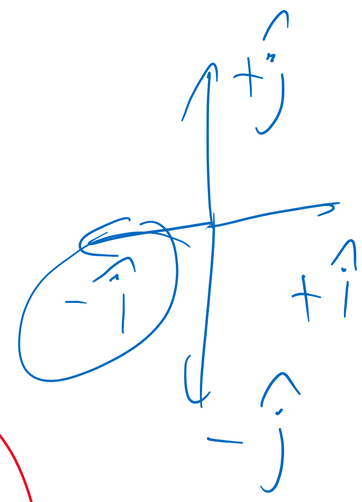


$$V_p = V_1 + V_2 + V_3 + V_4$$

$$= \frac{kQ_1}{R_1} + \frac{kQ_2}{R_2} + \frac{kQ_3}{R_3} + \frac{kQ_4}{R_4}$$

$$= k\frac{(-Q)}{d} + \frac{k(-Q)}{2d} + \frac{kQ}{d} + \frac{kQ}{d}$$

$$= -\frac{kQ}{d} - \frac{kQ}{2d} + \frac{kQ}{d} + \frac{kQ}{d}$$

$$= \frac{kQ}{d} - \frac{kQ}{2d} = \frac{2kQ - kQ}{2d} = \frac{kQ}{d}$$

$$= \frac{9\times10^{9} \cdot 5\times10^{-15}}{4\times10^{-2}} = 11.25\times10^{-4}\ \text{V}$$