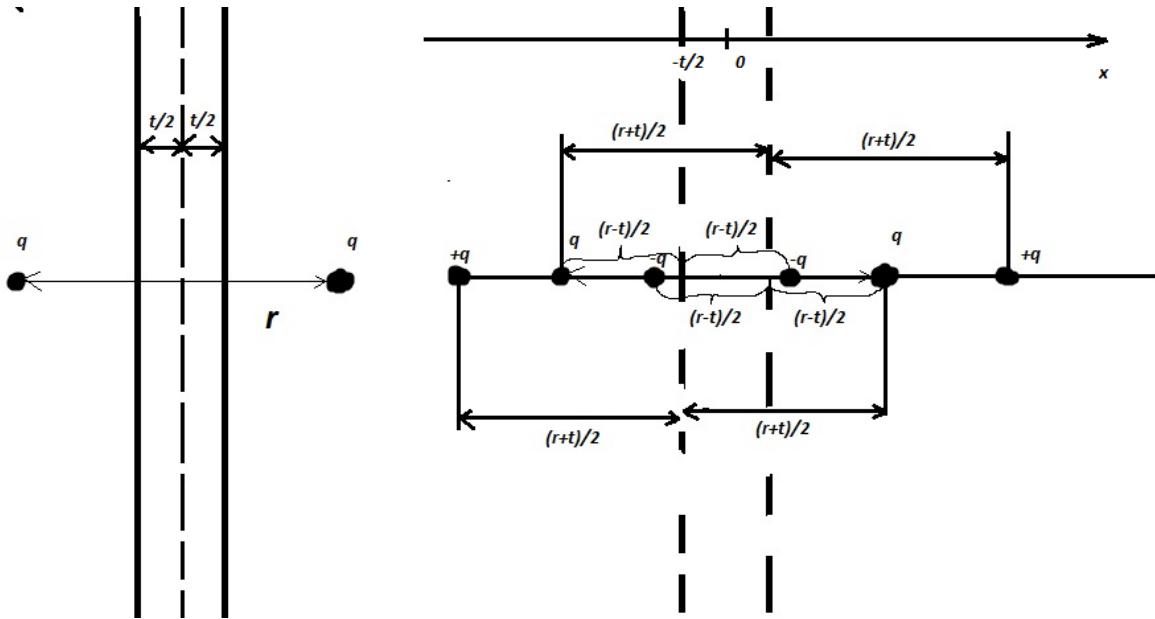


Answer to Question #67584, Physics / Electromagnetism

Question: If a metal plate of thickness 't'm is kept between two equal charges and the separation between the charges is 'r'm. Find the Electric Field Intensity, 'E'.

Solution: (please consider reformulating of the question, in the current state it is making no sense)



First of all lets consider the influence of the “left” charge. For this charge the plate can be presented as a superposition of two infinite half-spaces with $\epsilon = 1$ and $\epsilon = -1$ shifted t m one from another. Then, using the “mirror method” we can construct the corresponding charges that are representing the charge distribution on the plate generated by the “left” charge. The same thing can be done for the “wright” charge. Then the resulting Intensity of Electric Field E can be constructed as a superposition of the influences of the real and virtual charges. For instance on the x axis it can be calculated as

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