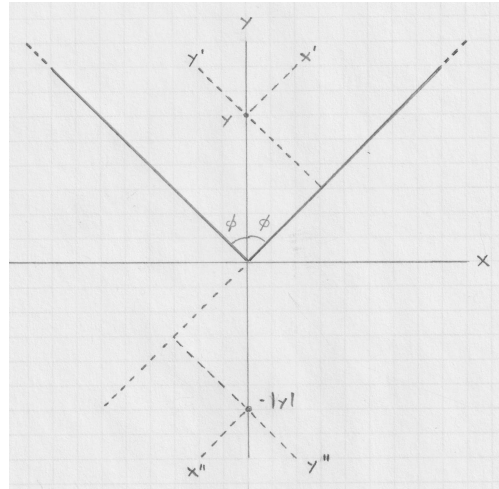


[lex7] Electric field of V-shaped line charge

Consider a V-shaped line with each leg at an angle ϕ away from the y -axis and the apex at the origin of a Cartesian coordinate system. The line charge density is uniform and has the value $\lambda > 0$. Determine magnitude and direction of the electric field generated at points along the y -axis, for positive and negative y .

Hint: Calculate the electric field generated by one leg of the V by using the expression developed in [lex5] and the auxiliary coordinate systems $(x'y')$ or (x'',y'') .



Solution: