Vector Fields

Scalar and Vector Fields

Question

Sketch the following plane vector field and determine its field lines.

$\underline{F}(x, y) = \nabla \ln(x^+ y^2)$

Answer

$\underline{F}(x, y) = \nabla \ln(x^+ y^2)$

The field lines satisfy $\frac{dx}{x} = \frac{dy}{y}$.
Thus they are radial lines
$y = Cx$ (and x = 0)