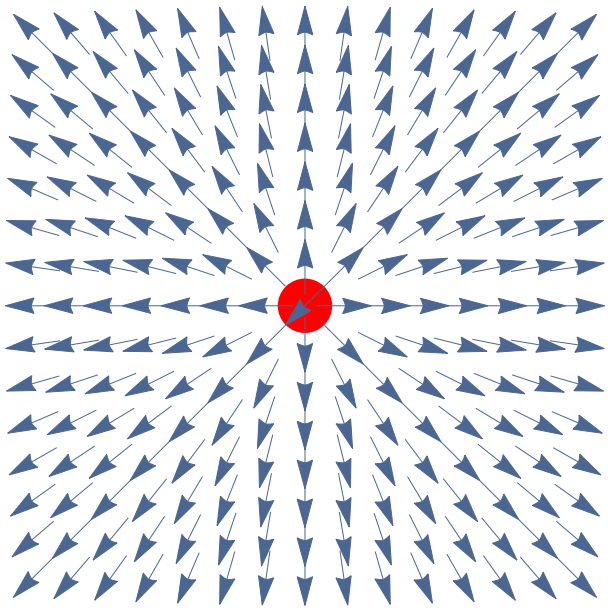
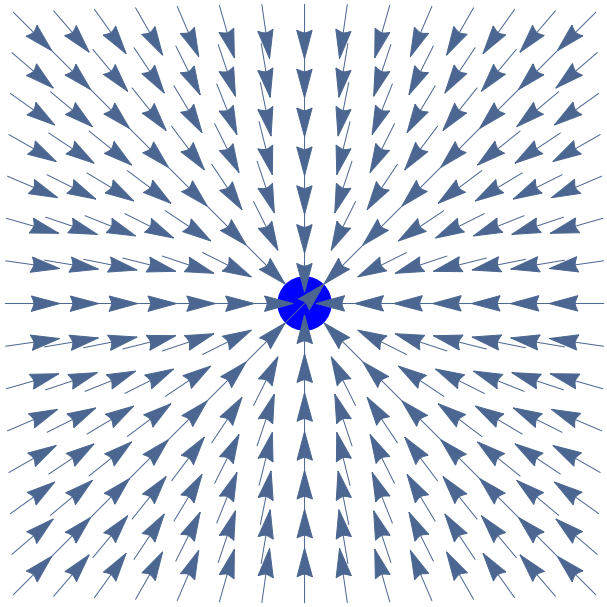
Fields (general)

In all problems $\vec{r} = (x, y) = x\hat{i} + y\hat{j}$, $r = \sqrt{x^2 + y^2}$

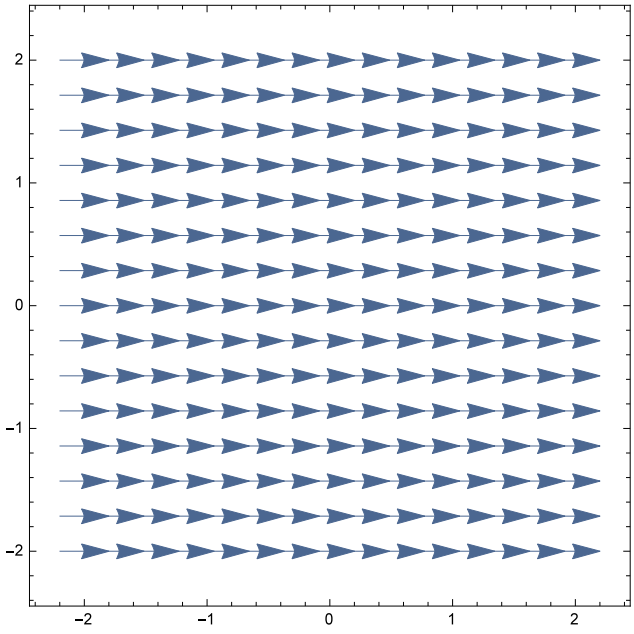
1. Scalar fields. Sketch level lines ("equipotentials") for $V(\vec{r})$
   (a) $V = 1/r$ ("positive charge")
   (b) $V = -1/r$ ("negative charge")
   (c) $V = -x$ ("uniform field")
2. Vector fields. Sketch field lines using the directional plots.
   (a) "positive charge"



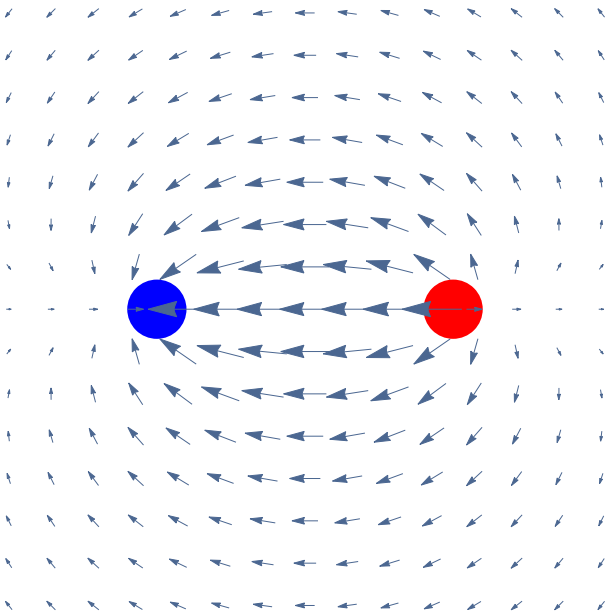
(b) "negative charge"



(c) "uniform field"



(d) "dipole"



(e) "magnetic field from current"