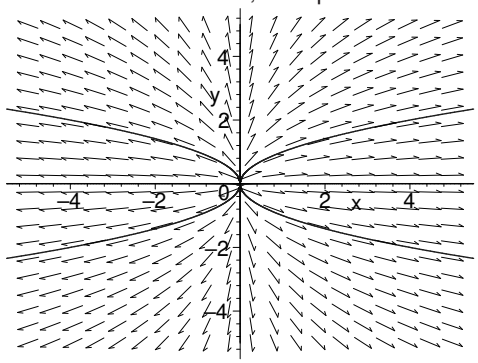
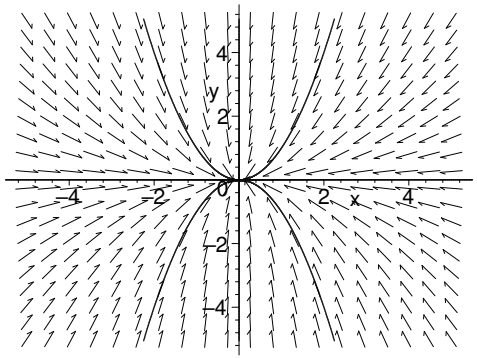
distinct real roots, both positive



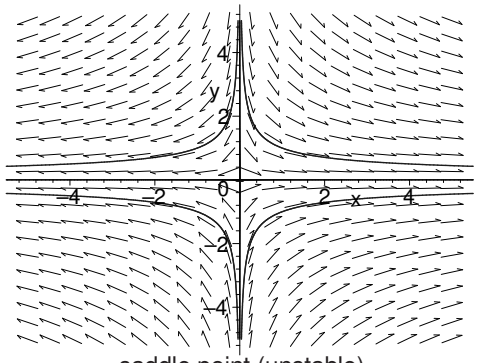

node source (unstable)

distinct real roots, both negative



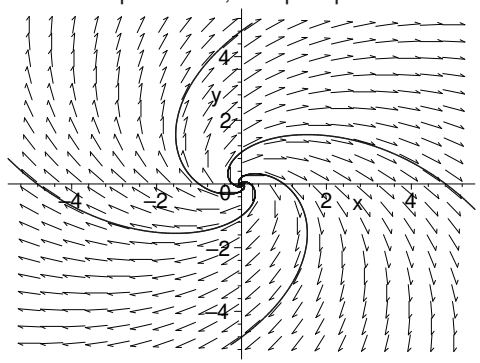

node sink (asymptotically stable)

distinct real roots, different signs



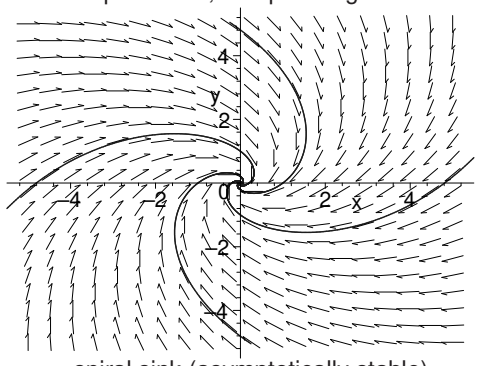

saddle point (unstable)

complex roots, real part positive



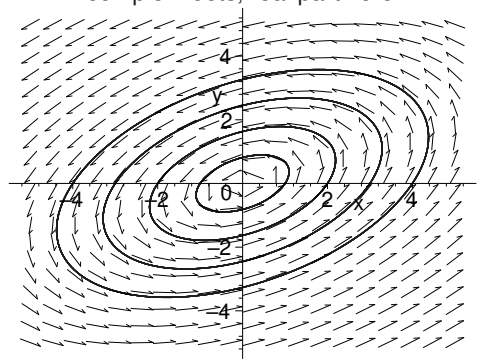

spiral source (unstable)

complex roots, real part negative



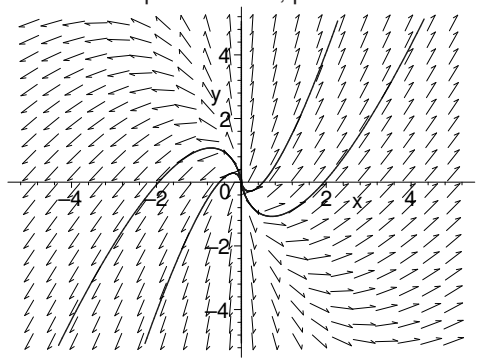

spiral sink (asymptotically stable)

complex roots, real part zero



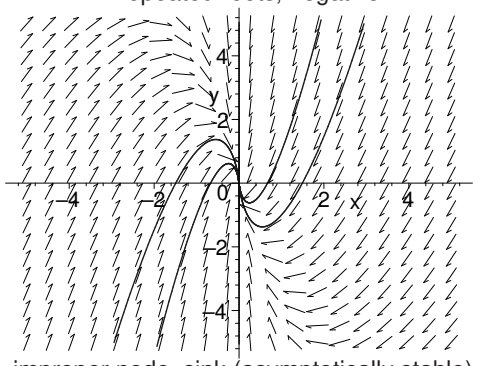

center (stable)

repeated roots, positive



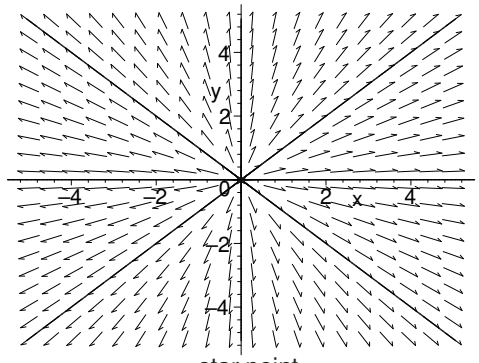

improper node, source (unstable)

repeated roots, negative




improper node, sink (asymptotically stable)

repeated roots, diagonal matrix




star point