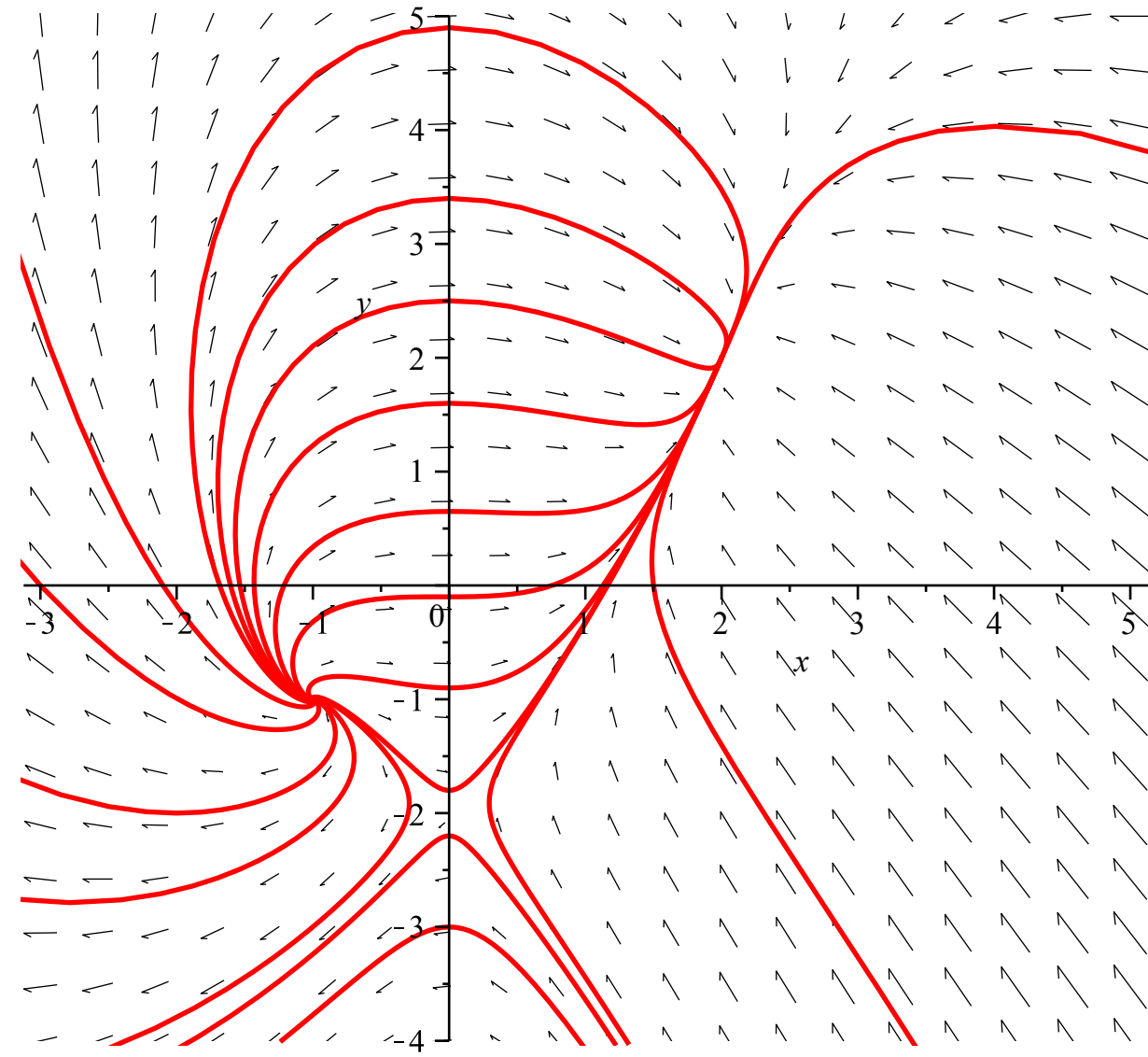


Phase portraits of some systems from exercises to the Section 10.3

Exercise 10.3.13.

System is

$$\frac{d}{dt} x(t) = y(t) - x(t)^2 + 2$$
$$\frac{d}{dt} y(t) = x(t)^2 - x(t)y(t)$$

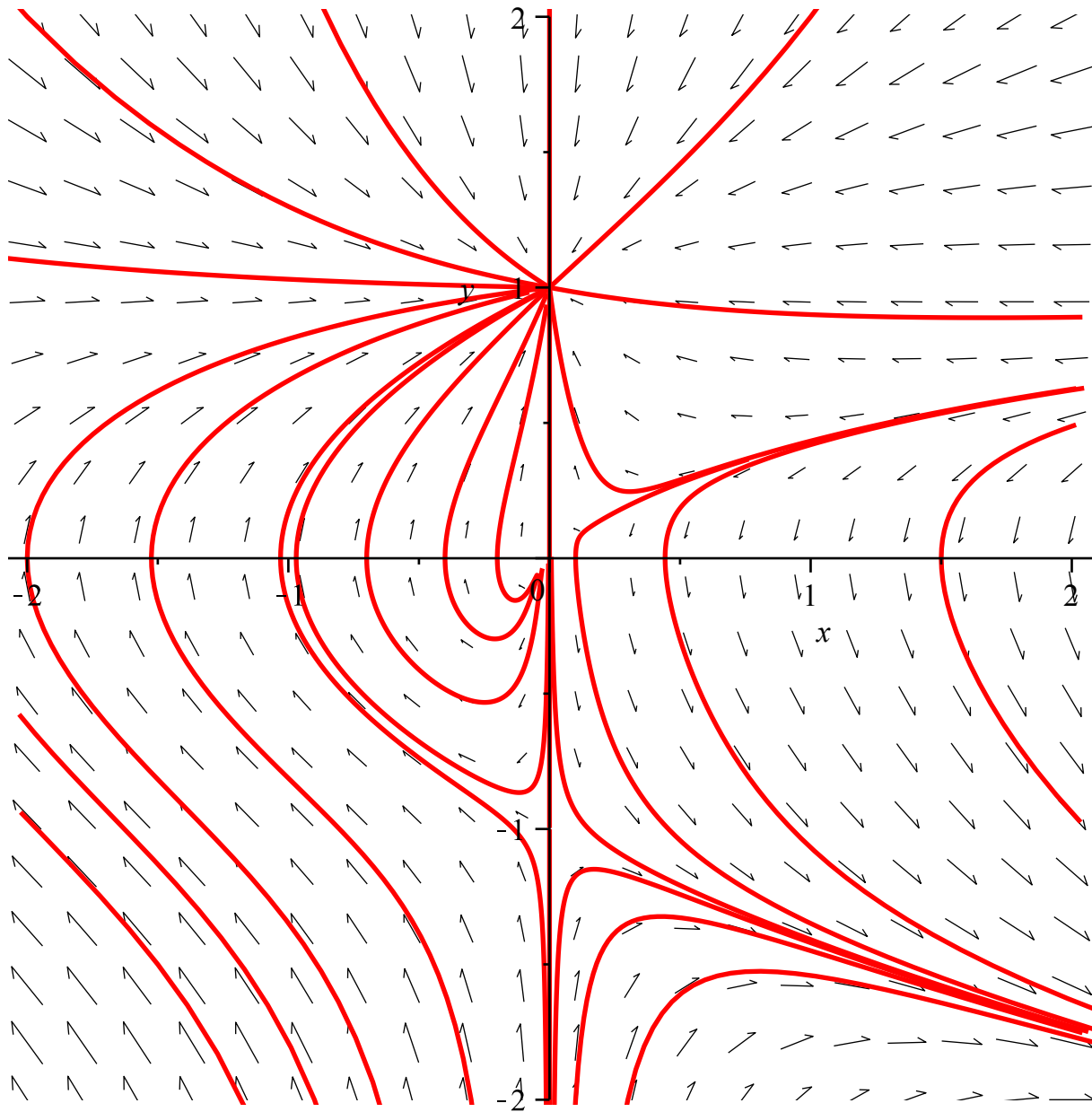


Exercise 10.3.17.

$$\frac{d}{dt} x(t) = -2 \cdot x(t) \cdot y(t)$$

System is

$$\frac{d}{dt} y(t) = y(t) - x(t) + x(t) \cdot y(t) - y(t)^3$$



Complicated phase portrait near the origin is due to quite degenerated nature of the system there. The linearization method does not work for the origin!