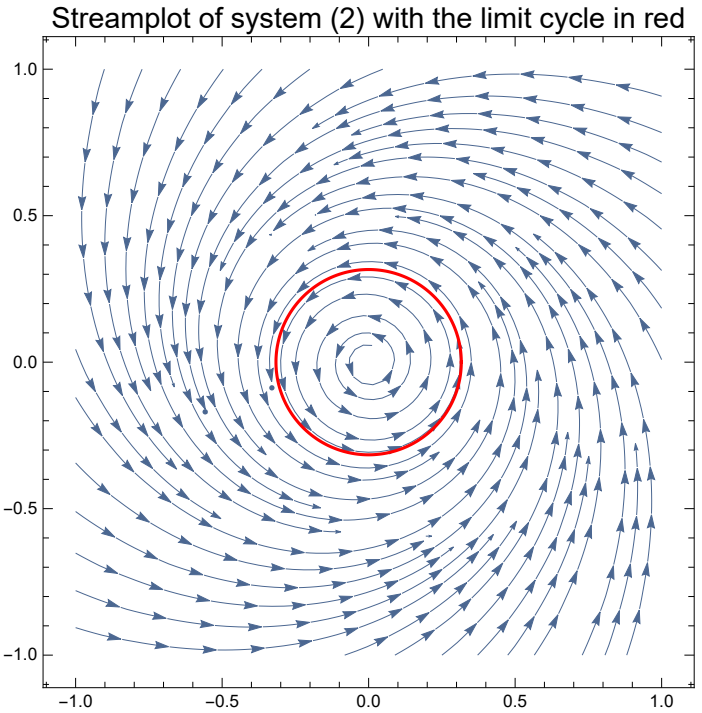
In[ ]:=

```
p1 = StreamPlot[
   {x/10 - y^3 - x*y^2 - x^2 y - y - x^3,
    x + y/10 + x*y^2 + x^3 - y^3 - x^2 y
   },
   {x, -1, 1},
   {y, -1, 1}
  ];
mu0 = 1/10;
w0 = 1;
v0 = 1;
x0 = Sqrt[mu0];
tMax = 2*Pi/(w0 + mu0*v0);

sol = NDSolve[
   {x'[t] == x[t]/10 - y[t]^3 - x[t] × y[t]^2 - x[t]^2 × y[t] - y[t] - x[t]^3,
    y'[t] == x[t] + y[t]/10 + x[t] × y[t]^2 + x[t]^3 - y[t]^3 - x[t]^2 × y[t],
    x[0] == x0,
    y[0] == 0
   },
   {x[t], y[t]},
   {t, 0, tMax}
  ];

p2 = ParametricPlot[Evaluate[{x[t], y[t]} /. sol],
   {t, 0, tMax},
   PlotStyle → {RGBColor[1, 0, 0]}
  ];
title = "Streamplot of system (2) with the limit cycle in red";
Show[p1, p2, PlotLabel → Style[title, FontSize → 15]]
```

Out[ ]=




```
TransformedField["Polar" → "Cartesian",
 Cos * (mu * r - r^3) - r * Sin * (w + v * r^2), {r, t} -> {x, y}]
```

```
TransformedField["Polar" → "Cartesian",
 Sin * (mu * r - r^3) + r * Cos * (w + v * r^2), {r, t} -> {x, y}]
```

Out[ ]= $\text{mu}\, x - x^3 - w\, y - v\, x^2\, y - x\, y^2 - v\, y^3$

Out[ ]= $w\, x + v\, x^3 + \text{mu}\, y - x^2\, y + v\, x\, y^2 - y^3$