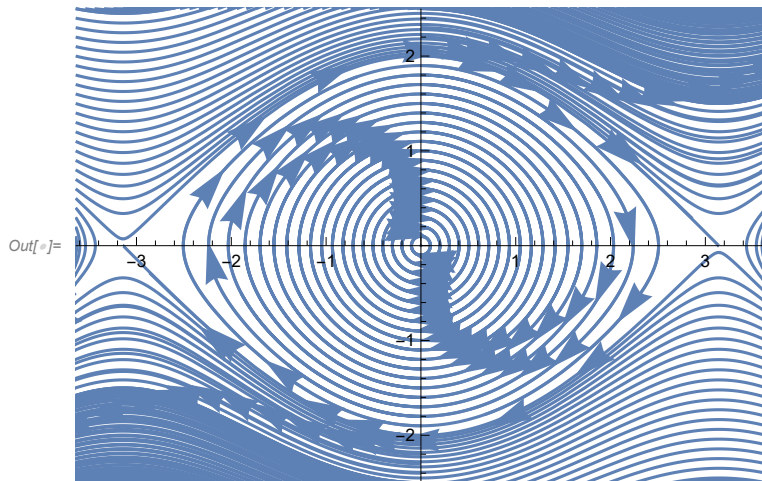```
In[ ]:= Clear["Global`*"]
minx = -π - 0.5; maxx = π + 0.5; miny = -2.5; maxy = 2.5; σ = 0;
sol[x0_, y0_] := NDSolve[{x'[t] == y[t],
    y'[t] == -Sin[x[t]] - σ * y[t], x[0] == x0, y[0] == y0}, {x, y}, {t, 0, 10}]
initialCondition = Join[Table[{0, y}, {y, miny, maxy, 0.1}],
    Table[{minx, y}, {y, miny, maxy, 0.1}], Table[{maxx, y}, {y, miny, maxy, 0.1}],
    Table[{x, miny}, {x, minx, maxx, 0.1}], Table[{x, maxy}, {x, minx, maxx, 0.1}]];
Show[Table[ParametricPlot[Evaluate[{x[t], y[t]} /.
      sol[initialCondition〚i, 1〛, initialCondition〚i, 2〛]], {t, 0, 10},
    PlotRange → {{minx, maxx}, {miny, maxy}}], {i, Length[initialCondition]}] /.
  Line[x_] :> {Arrowheads[{0., 0.05, 0.05, 0.}], Arrow[x]}]
```
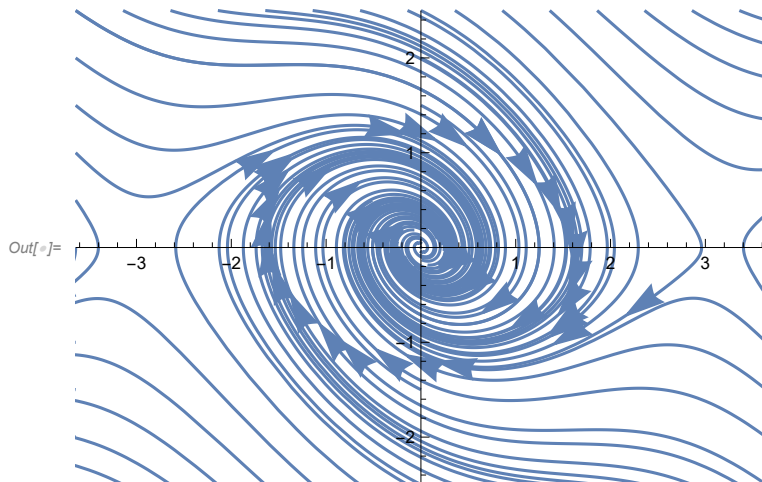


```
In[ ]:= σ = 0.5;
sol[x0_, y0_] := NDSolve[{x'[t] == y[t],
    y'[t] == -Sin[x[t]] - σ * y[t], x[0] == x0, y[0] == y0}, {x, y}, {t, 0, 10}]
initialCondition = Join[Table[{0, y}, {y, miny, maxy, 0.5}],
    Table[{minx, y}, {y, miny, maxy, 0.5}], Table[{maxx, y}, {y, miny, maxy, 0.5}],
    Table[{x, miny}, {x, minx, maxx, 0.5}], Table[{x, maxy}, {x, minx, maxx, 0.5}]];
Show[Table[ParametricPlot[Evaluate[{x[t], y[t]} /.
      sol[initialCondition〚i, 1〛, initialCondition〚i, 2〛]], {t, 0, 10},
    PlotRange → {{minx, maxx}, {miny, maxy}}], {i, Length[initialCondition]}] /.
  Line[x_] :> {Arrowheads[{0., 0.05, 0.}], Arrow[x]}]
```
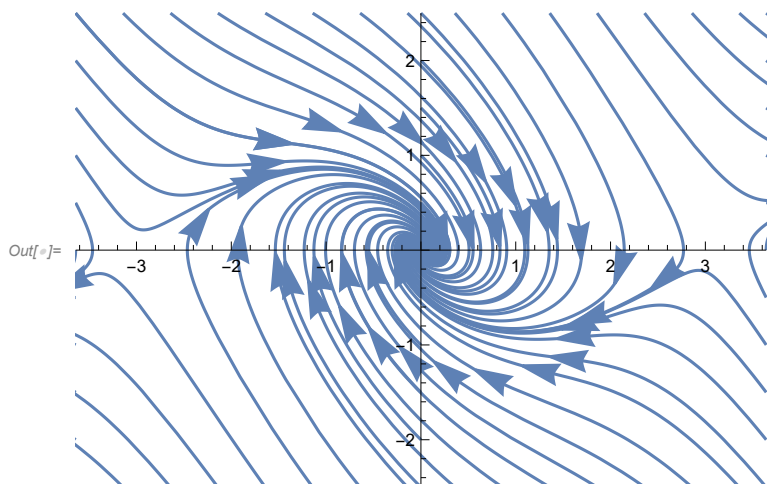
```
In[ ]:= σ = 1;
     sol[x0_, y0_] := NDSolve[{x'[t] == y[t],
        y'[t] == -Sin[x[t]] - σ * y[t], x[0] == x0, y[0] == y0}, {x, y}, {t, 0, 10}]
     initialCondition = Join[Table[{0, y}, {y, miny, maxy, 0.5}],
        Table[{minx, y}, {y, miny, maxy, 0.5}], Table[{maxx, y}, {y, miny, maxy, 0.5}],
        Table[{x, miny}, {x, minx, maxx, 0.5}], Table[{x, maxy}, {x, minx, maxx, 0.5}]];
     Show[Table[ParametricPlot[Evaluate[{x[t], y[t]} /.
           sol[initialCondition[[i, 1]], initialCondition[[i, 2]]]], {t, 0, 10},
         PlotRange → {{minx, maxx}, {miny, maxy}}], {i, Length[initialCondition]}] /.
        Line[x_] :> {Arrowheads[{0., 0.05, 0.}], Arrow[x]}]
```
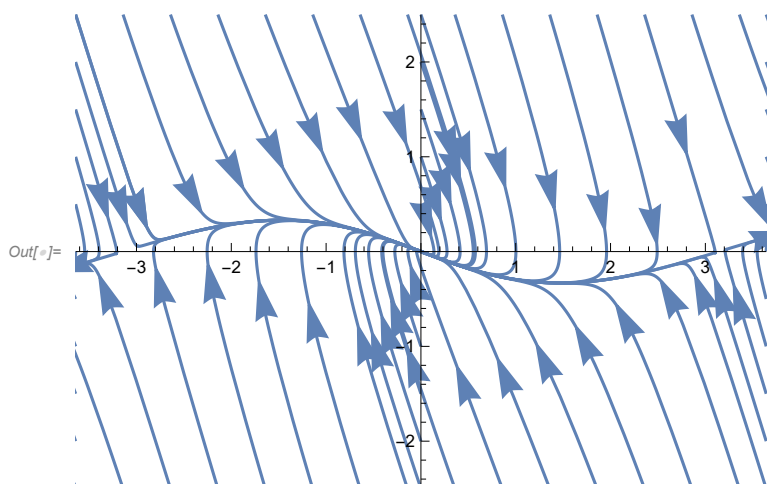


```
In[ ]:= σ = 3;
     sol[x0_, y0_] := NDSolve[{x'[t] == y[t],
        y'[t] == -Sin[x[t]] - σ * y[t], x[0] == x0, y[0] == y0}, {x, y}, {t, 0, 10}]
     initialCondition = Join[Table[{0, y}, {y, miny, maxy, 0.5}],
        Table[{minx, y}, {y, miny, maxy, 0.5}], Table[{maxx, y}, {y, miny, maxy, 0.5}],
        Table[{x, miny}, {x, minx, maxx, 0.5}], Table[{x, maxy}, {x, minx, maxx, 0.5}]];
     Show[Table[ParametricPlot[Evaluate[{x[t], y[t]} /.
           sol[initialCondition[[i, 1]], initialCondition[[i, 2]]]], {t, 0, 10},
         PlotRange → {{minx, maxx}, {miny, maxy}}], {i, Length[initialCondition]}] /.
        Line[x_] :> {Arrowheads[{0., 0.05, 0.}], Arrow[x]}]
```

In[●]:= σ = 10;
sol[x0_, y0_] := NDSolve[{x'[t] == y[t],
    y'[t] == -Sin[x[t]] - σ * y[t], x[0] == x0, y[0] == y0}, {x, y}, {t, 0, 10}]
initialCondition = Join[Table[{0, y}, {y, miny, maxy, 0.5}],
    Table[{minx, y}, {y, miny, maxy, 0.5}], Table[{maxx, y}, {y, miny, maxy, 0.5}],
    Table[{x, miny}, {x, minx, maxx, 0.5}], Table[{x, maxy}, {x, minx, maxx, 0.5}]];
Show[Table[ParametricPlot[Evaluate[{x[t], y[t]} /.
        sol[initialCondition〚i, 1〛, initialCondition〚i, 2〛]], {t, 0, 10},
    PlotRange → {{minx, maxx}, {miny, maxy}}], {i, Length[initialCondition]}] /.
   Line[x_] :> {Arrowheads[{0., 0.05, 0.}], Arrow[x]}]

Out[●]=

In[●]:= σ = 10;
sol[x0_, y0_] := NDSolve[{x'[t] == y[t],