In[1]:=
```
sys[m_, x0_, y0_] := {x'[t] == y[t] + m * x[t] * (x[t]^2 + y[t]^2),
  y'[t] == -x[t] + m * y[t] * (x[t]^2 + y[t]^2), x[0] == x0, y[0] == y0}
```

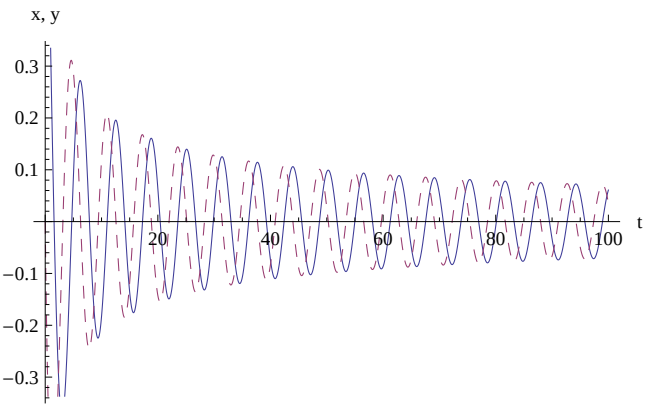
In[2]:=
```
ans[m_, x0_, y0_, tf_] :=
 {x[t], y[t]} /. Flatten[NDSolve[sys[m, x0, y0], {x[t], y[t]}, {t, 0, tf}]]
```

In[3]:=
```
sol1 = ans[-1, 1, 0, 100]
```

Out[3]=
```
{InterpolatingFunction[{{0., 100.}}, <>][t], InterpolatingFunction[{{0., 100.}}, <>][t]}
```

In[4]:=
```
oscgraph1 = Plot[{First[sol1], Last[sol1]}, {t, 0, 100},
  AxesLabel → {"t", "x, y"}, PlotStyle → {Dashing[{}], Dashing[{0.02, 0.02}]}]
```

Out[4]=



In[5]:=
```
xsol1[t_] := First[sol1]
```

In[6]:=
```
ysol1[t_] := Last[sol1]
```

In[7]:=
```
oscgraph2 = ParametricPlot[{xsol1[t], ysol1[t]},
  {t, 0, 100}, PlotRange → {{-2, 2}, {-1, 1}}, AxesLabel → {"x", "y"}]
```

Out[7]=