In[1]:=
```
? ParametricPlot
```

Out[1]=

Symbol

ParametricPlot$\left[\left\{f_x, f_y\right\}, \{u, u_{min}, u_{max}\}\right]$ generates a parametric plot of a curve with x and y coordinates f_x and f_y as a function of u.

ParametricPlot$\left[\left\{\left\{f_x, f_y\right\}, \left\{g_x, g_y\right\}, \ldots\right\}, \{u, u_{min}, u_{max}\}\right]$ plots several parametric curves.

ParametricPlot$\left[\left\{f_x, f_y\right\}, \{u, u_{min}, u_{max}\}, \{v, v_{min}, v_{max}\}\right]$ plots a parametric region.

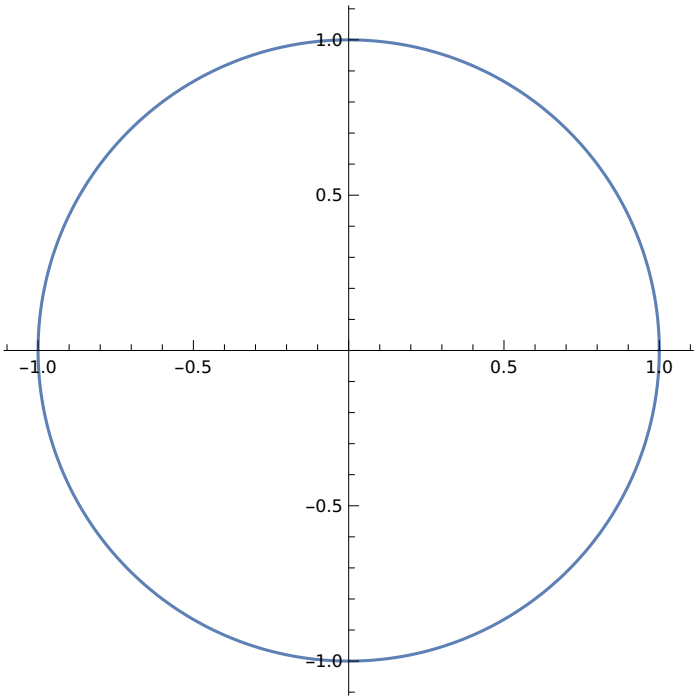
ParametricPlot$\left[\left\{\left\{f_x, f_y\right\}, \left\{g_x, g_y\right\}, \ldots\right\}, \{u, u_{min}, u_{max}\}, \{v, v_{min}, v_{max}\}\right]$ plots several parametric regions.

ParametricPlot$\left[\left\{\ldots, w\left[\left\{f_x, f_y\right\}\right], \ldots\right\}, \ldots\right]$ plots the curve $\left\{f_x, f_y\right\}$ with features defined by the symbolic wrapper w.

ParametricPlot[$\ldots, \{u, v\} \in reg$] takes parameters $\{u, v\}$ to be in the geometric region reg.

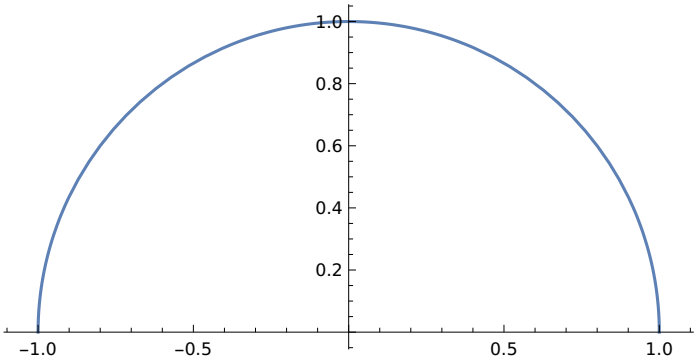
In[2]:=
```
ParametricPlot[{Cos[t], Sin[t]}, {t, 0, 2 Pi}]
```

Out[2]=



In[3]:=
```
ParametricPlot[{Cos[t], Sin[t]}, {t, 0, Pi}]
```

Out[3]=




```
ParametricPlot[{Cos[t], Sin[t]}, {t, 0, Pi}]
```


In[18]:=
```
theta0 = Pi / 3;
thetad0 = 0;
g = 9.81;
l = 1;
wn = Sqrt[g / l];
```

In[23]:=
```
theta = theta0 Cos[wn t] + 1 / wn thetad0 Sin[wn t]
```

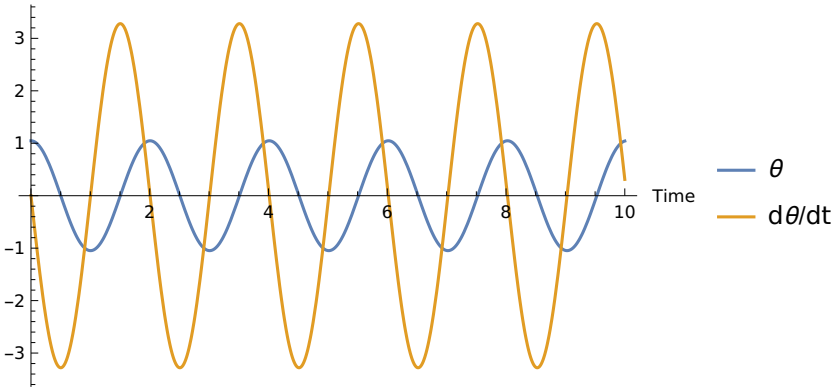
Out[23]=
$$0. + \frac{1}{3}\,\pi\,\text{Cos}[3.13209\ t]$$

In[24]:=
```
thetad = -wn theta0 Sin[wn t] + thetad0 Cos[wn t]
```

Out[24]=
```
-3.27992 Sin[3.13209 t]
```

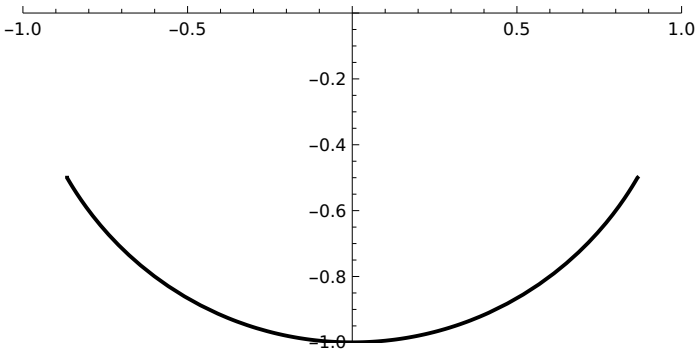
In[25]:=
```
Plot[{theta, thetad}, {t, 0, 10}, PlotLegends → {"θ", "dθ/dt"}, AxesLabel → {"Time"}]
```

Out[25]=



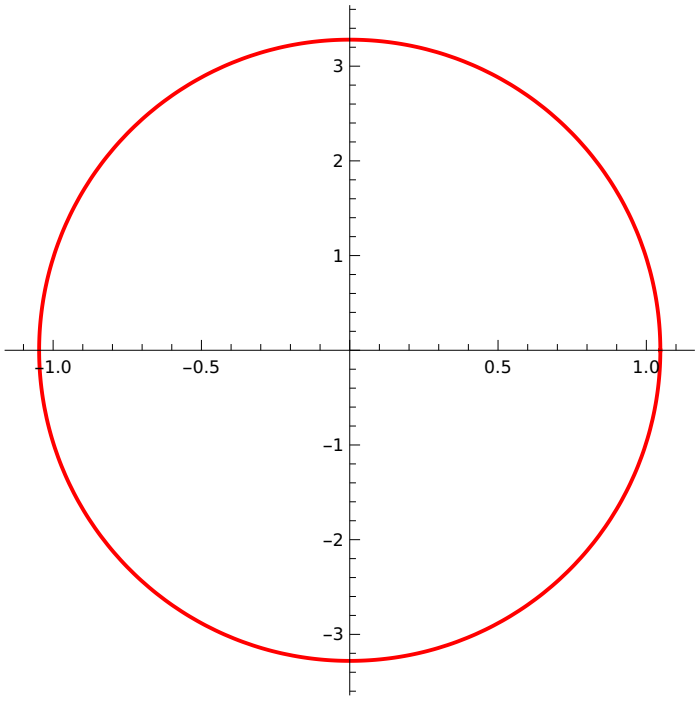
In[26]:=
```
ParametricPlot[{l Sin[theta], -l Cos[theta]}, {t, 0, 1},
 PlotRange → {{-1, 1}, {-1, 0}}, PlotStyle → {Thick, Black}]
```

Out[26]=



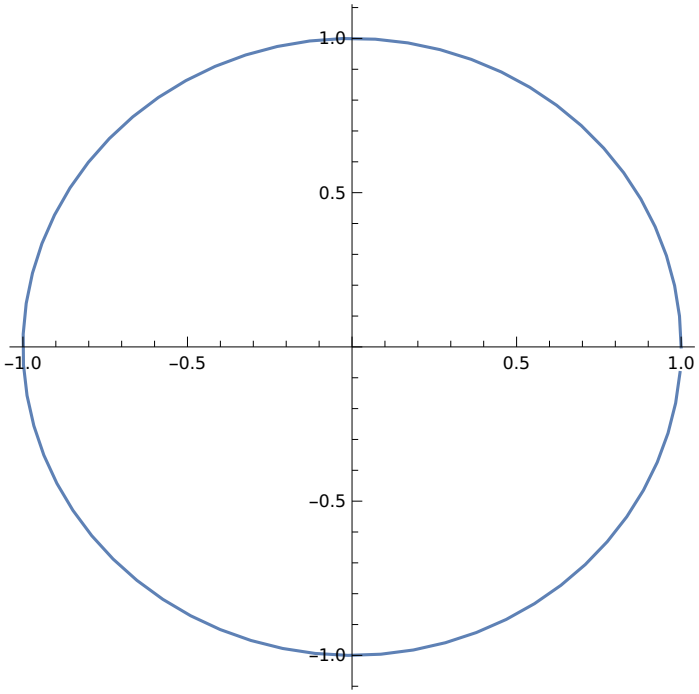
In[28]:=
```
ParametricPlot[{theta, thetad}, {t, 0, 2 Pi / wn},
 PlotStyle → {Thick, Red}, AspectRatio → 1]
```

Out[28]=



In[29]:=
```
ListLinePlot[Table[{Cos[t], Sin[t]}, {t, 0, 2 Pi, 0.1}], AspectRatio → 1]
```

Out[29]=



In[32]:=
```
GraphicsRow[
{
ParametricPlot[{theta, thetad}, {t, 0, 2 Pi / wn},
   PlotStyle → {Thick, Red}, AspectRatio → 1, PlotLabel → "ListLinePlot"],
ListLinePlot[Table[{Cos[t], Sin[t]}, {t, 0, 2 Pi, 0.1}],
   AspectRatio → 1, PlotLabel → "ParametricPlot"]
}
]
```

Out[32]=