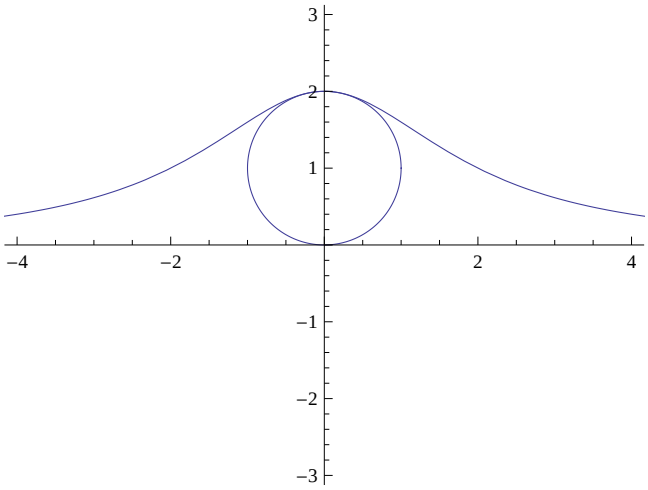
Witch of Agnesi
circle radius a = 1

```
g1 = ParametricPlot[{Cos[t], Sin[t] + 1}, {t, 0, 2 Pi}]
g2 = ParametricPlot[{2 Cot[t], 2 Sin[t]^2}, {t, 0, Pi}]
Show[g1, g2, PlotRange → {-3, 3}]
```



Witch of Agnesi for ellipse
semimajor axis a = 2, semiminor axis b = 1

```
g3 = ParametricPlot[{2 Cos[t], Sin[t] + 1}, {t, 0, 2 Pi}]
g4 = ParametricPlot[{2 Cot[t], 8 Tan[t]^2 / (1 + 4 Tan[t]^2)}, {t, 0, Pi}]
Show[g3, g4, PlotRange → {-3, 3}]
```