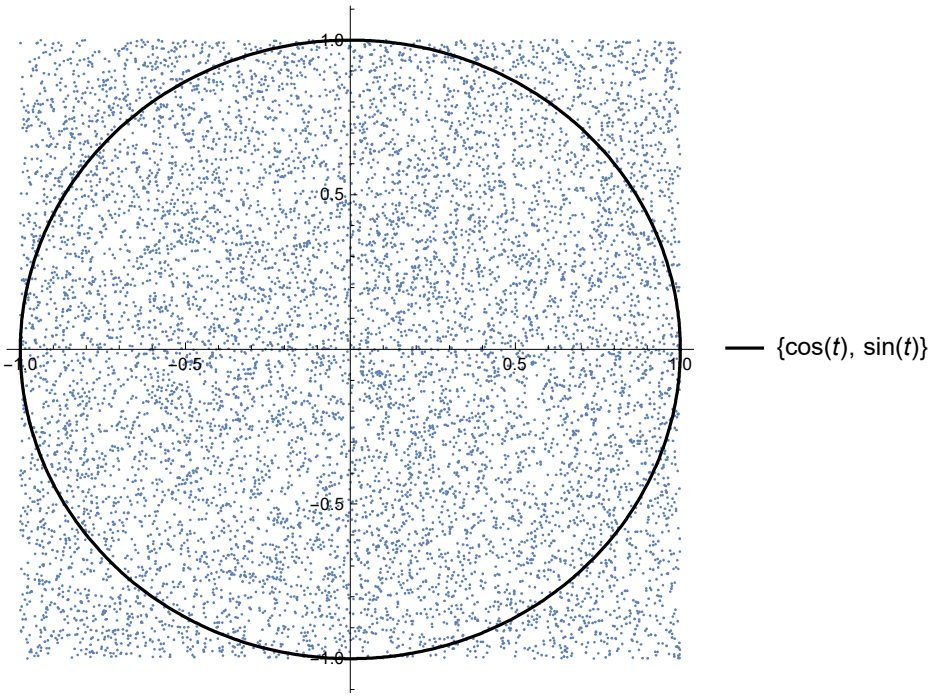
In[1]:=
```
pairs = RandomReal[{-1, 1}, {10000, 2}];
lp = ListPlot[pairs, AspectRatio → 1];
Show[lp,
 ParametricPlot[{Cos[t], Sin[t]}, {t, 0, 2 π}, PlotStyle → Black, PlotTheme → Detailed]]
```

Out[3]=



In[4]:=
```
calcPi[n_] := 4 * Count[Map[Norm, RandomReal[{-1, 1}, {n, 2}]], _?(# ≤ 1 &)] / n
```

In[9]:=
```
N[calcPi[10^2]]
N[calcPi[10^4]]
N[calcPi[10^6]]
N[calcPi[10^8]]
```

Out[9]= 3.2

Out[10]= 3.1144

Out[11]= 3.14182

Out[12]= 3.14121