The function $y = \arccos x$, the inverse of $y = \cos x$, can not be plotted in a direct way, because PostScript does know only the arctan function.

$$\arccos x = \frac{\pi}{2} - \arctan \frac{x}{\sqrt{1 - x^2}} \tag{1}$$

Figure 1 shows the plot of equation 1.

```
\psset{xunit=2, plotpoints=500, plotstyle=dots}
\begin{pspicture}(-1.5,-5)(1.5,3)
  \psaxes[Dx=0.5]{->}(0,0)(-1.5,-5)(1.5,3)
  \psplot{-1}{1}{%
    x abs 0.001 lt
     {0}
     {x dup dup mul neg 1 add sqrt atan DegtoRad neg 1.56
        add} ifelse }
  \psplot{-1}{1}{% the nagative values of the root
    x abs 0.001 lt
     {0}
     {x dup dup mul neg 1 add sqrt neg atan DegtoRad neg
        1.56 add} ifelse}
  \uput[-45](1.25,0){$x$}
  \uput[180](0,3.25){$y$}
  \rput[l](0.4,2){$\mathbf{f(x)=\arccos x}$}
\end{pspicture}
```

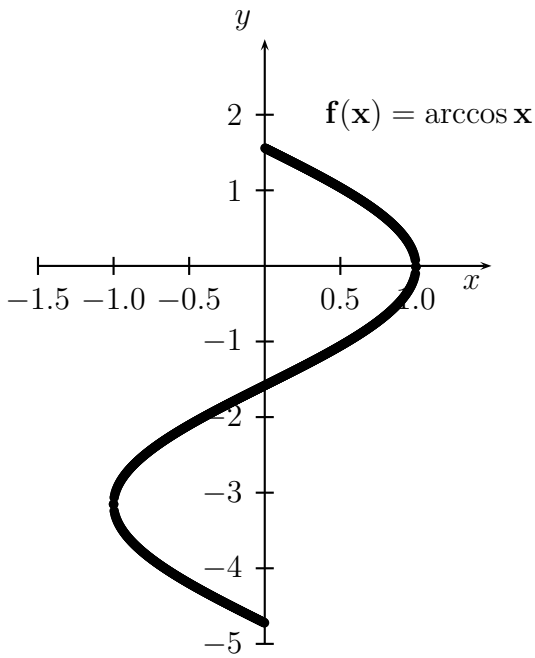

Figure 1: The plot of $y = \arccos x$ with `psplot`

It is easier to use the `\parametric` macro and the parametric function

$$\begin{aligned} x &= \cos\varphi \\ y &= -\varphi \end{aligned} \tag{2}$$

with $-90 \leq \varphi \leq 270$.

```
\begin{pspicture}(-1.5,-5)(1.5,3)
  \psaxes[Dx=0.5]{->}(0,0)(-1.5,-5)(1.5,3)
  \parametricplot{-90}{270}{t cos t neg DegtoRad }
  \uput[-45](1.25,0){$x$}
  \uput[180](0,3.25){$y$}
  \rput[l](0.4,2){$\mathbf{f(x)=\arccos x}$}
\end{pspicture}
```

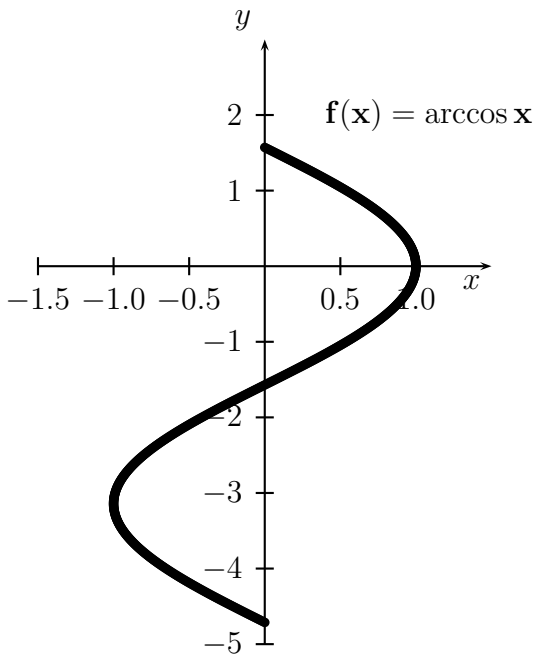

Figure 2: The plot of $y = \arccos x$ with `parametricplot`