

$\arccos: [-1, 1] \rightarrow [0, \pi] \subset \mathbb{R}$

$$\arccos'(x) = (\arccos(x))', \text{ deriv. rule for inv. fn. } \frac{1}{(\cos(\arccos(x)))'}$$

$$= \frac{1}{-\sin(\arccos(x))} = \frac{-1}{\sqrt{1-x^2}}$$

$$\sin(y) = \pm \sqrt{1 - \cos^2(y)}, \cos(y) = x$$

↓ in the interval  $[0, \pi]$   
we have  $\sin(y) \geq 0$

