

Exercise 6

Find the numerical value of each expression.

(a) $\sinh 1$

(b) $\sinh^{-1} 1$

Solution**Part (a)**

Use the definition of hyperbolic sine listed on page 259.

$$\sinh 1 = \frac{e^1 - e^{-1}}{2} \approx 1.1752$$

Part (b)

Use the definition of inverse hyperbolic sine listed on page 262.

$$\sinh^{-1} 1 = \ln \left(1 + \sqrt{1^2 + 1} \right) = \ln \left(1 + \sqrt{2} \right) \approx 0.881374$$