

MEMORIAL UNIVERSITY OF NEWFOUNDLAND  
DEPARTMENT OF MATHEMATICS AND STATISTICS

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SECTION 3.6

**Math 1000 Worksheet**

FALL 2025

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**For practice only. Not to be submitted.**

1. Differentiate each of the following.
  - (a)  $y = \sinh(x^3)$
  - (b)  $y = \sinh^3(x)$
  - (c)  $f(x) = \frac{\cosh(x)}{\cos(x)}$
  - (d)  $y = x^{\cosh(x)}$
2. Prove that  $\frac{d}{dx}[\sinh(x)] = \cosh(x)$ .
3. Prove that  $\sinh(x + y) = \sinh(x) \cosh(y) + \cosh(x) \sinh(y)$ .