

Exercise 33

Find the derivative. Simplify where possible.

$$h(x) = \sinh(x^2)$$

Solution

Take the derivative using the chain rule.

$$\begin{aligned} h'(x) &= \frac{d}{dx}(\sinh x^2) \\ &= (\cosh x^2) \cdot \frac{d}{dx}(x^2) \\ &= (\cosh x^2) \cdot 2x \\ &= 2x \cosh x^2 \end{aligned}$$