

# General Leibniz rule

This text is just a stub.

**Objectives.** Recall the general Leibniz rule for the  $n$ th derivative of the product of two functions.

**Requirements.** Derivative of the product of two functions, Binomial Theorem.

**Exercise 1.** Expand:

$$(a + b)^2 =$$

$$(a + b)^3 =$$

**Exercise 2.** Recall the Binomial Theorem:

$$(a + b)^n = \sum_{k=0}^n \underbrace{\hspace{10em}}_?$$

**Exercise 3.** Calculate derivatives:

$$(fg)' =$$

$$(fg)'' =$$

$$(fg)''' =$$

**Exercise 4.** Write the general formula (*general Leibniz rule*):

$$(fg)^{(n)} =$$