

## Introduction to General Rules for Differentiation

We've now seen several specific rules for differentiation; for example,  $x^n$  is  $nx^{n-1}$ . We've even seen a few examples using this formula. We've also seen some general rules for extending these calculations. For instance,  $(cu)' = c \cdot u'$  and  $(u + v)' = u' + v'$ .

Today we'll learn more general rules; how to differentiate a product of functions, a quotient of functions, and best of all a composition of functions. At the end we'll learn something about higher derivatives.