

# DIFFERENTIATION FORMULAS

The Constant Function Derivative:  $\frac{d}{dx}(c) = 0$

The Power Rule:  $\frac{d}{dx}(x^n) = nx^{n-1}$

The Constant Multiple Rule:  $(cf)' = cf'$

The Sum Rule:  $(f + g)' = f' + g'$

The Difference Rule:  $(f - g)' = f' - g'$

The Product Rule:  $(fg)' = fg' + gf'$

The Quotient Rule:  $\left(\frac{f}{g}\right)' = \frac{gf' - fg'}{g^2}$

The Chain Rule:  $(f(g(x)))' = f'(g(x))g'(x)$