Differential Calculus Tangent Line And Normal Line

The Tangent Line

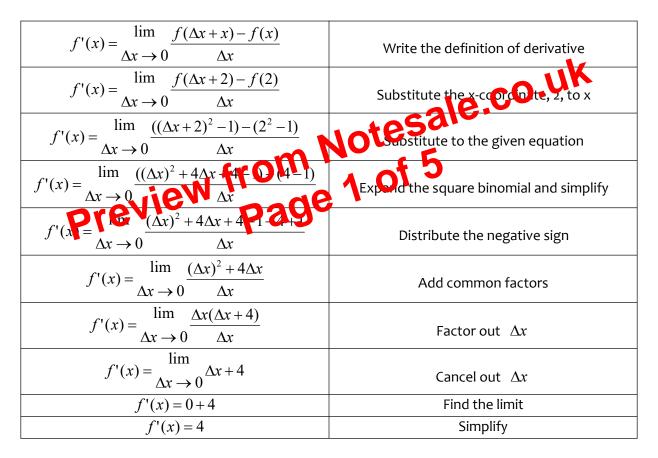
To find the derivative, one can use its definition which is $f'(x) = \frac{\lim_{\Delta x \to 0} \frac{f(\Delta x + x) - f(x)}{\Delta x}$. That

is to be read as "f prime of x is equal to the limit of f of quantity delta x plus x quantity minus f of x all over delta x as x approaches zero".

*Derivative - Function that tells the tangent line of the curve; slope

This would be further understood with some examples

Find an equation for the tangent line to the parabola $y = x^2 - 1$ at the point (2,3)



Since the tangent line of any equation is the slope of that same equation, the slope of the equation $y = x^2 - 1$ is 4, which is also its derivative.