



**MathsNET**

A joined up approach to  
teaching and learning  
mathematics

# Lagrange multipliers

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- At the (unconstrained) optimum of a function the partial derivatives are equal to
- At the (unconstrained) optimum the grad of the function is equal to
- Is the grad of a function,  $\nabla f(x, y)$ , a scalar or a vector quantity
- Complete the following sentence: At a constrained optimum the grad of the function and the grad of the constraint...



- Explain (in your own words) the purpose of Lagranges method of undetermined multipliers
- State the two steps in Lagranges method of undetermined multipliers
- Write an expression for the extended function that must be optimised in order to optimise the function  $f(x, y)$  subject to the constraint  $g(x, y) = c$