Anatomy of C-D Production/Utility Functions in Three Dimensions

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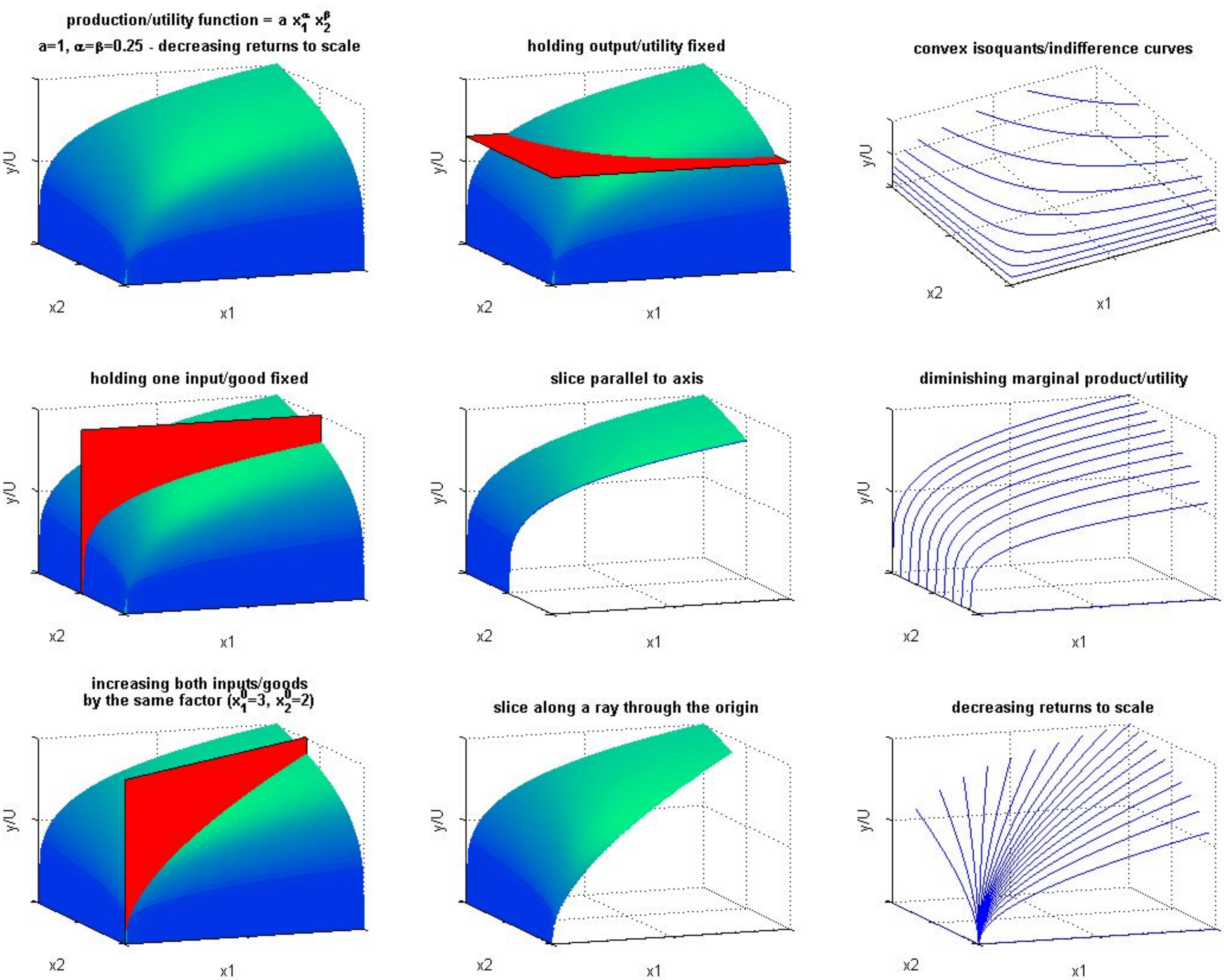
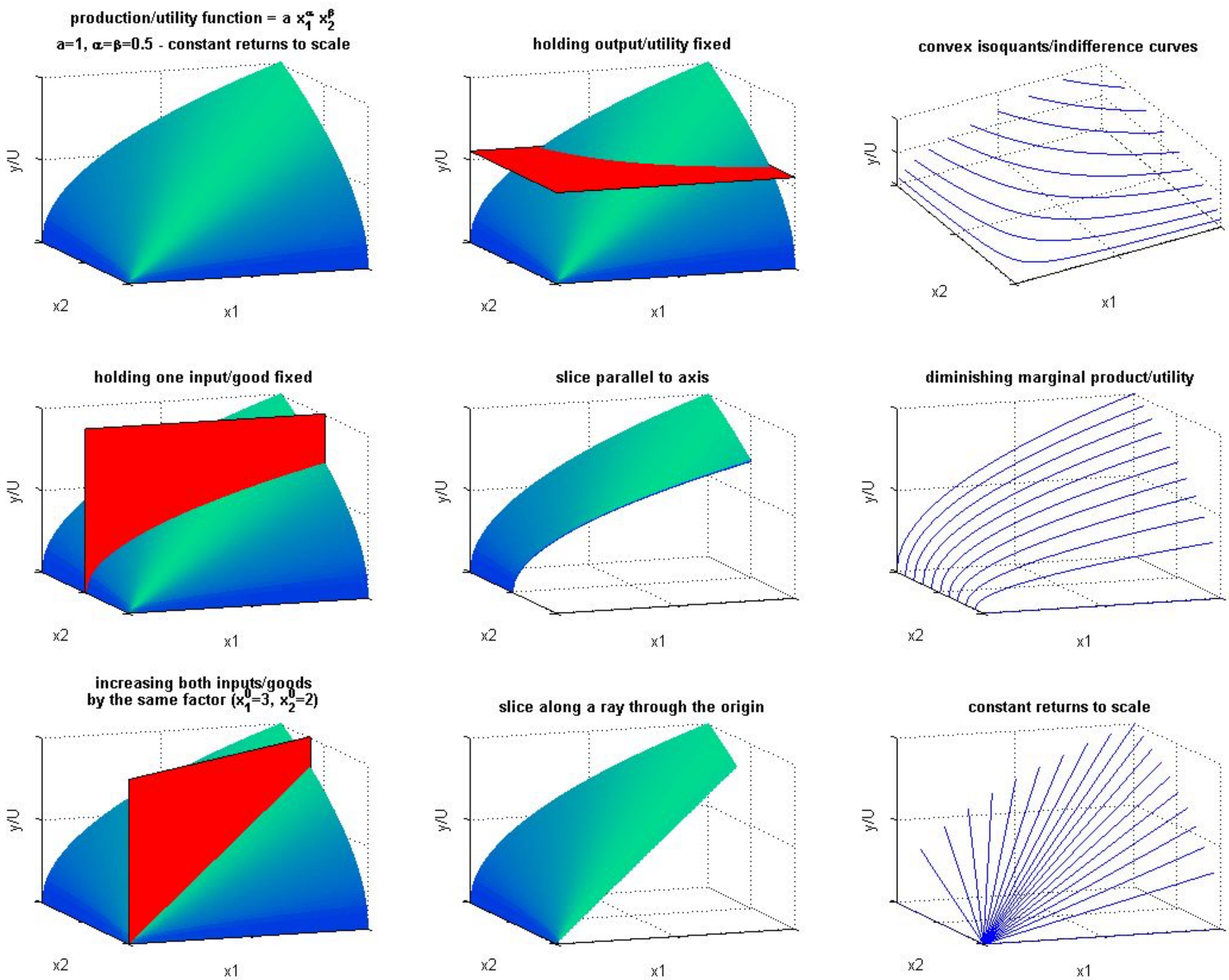
Decreasing returns to scale

(Strongly concave production/utility function)



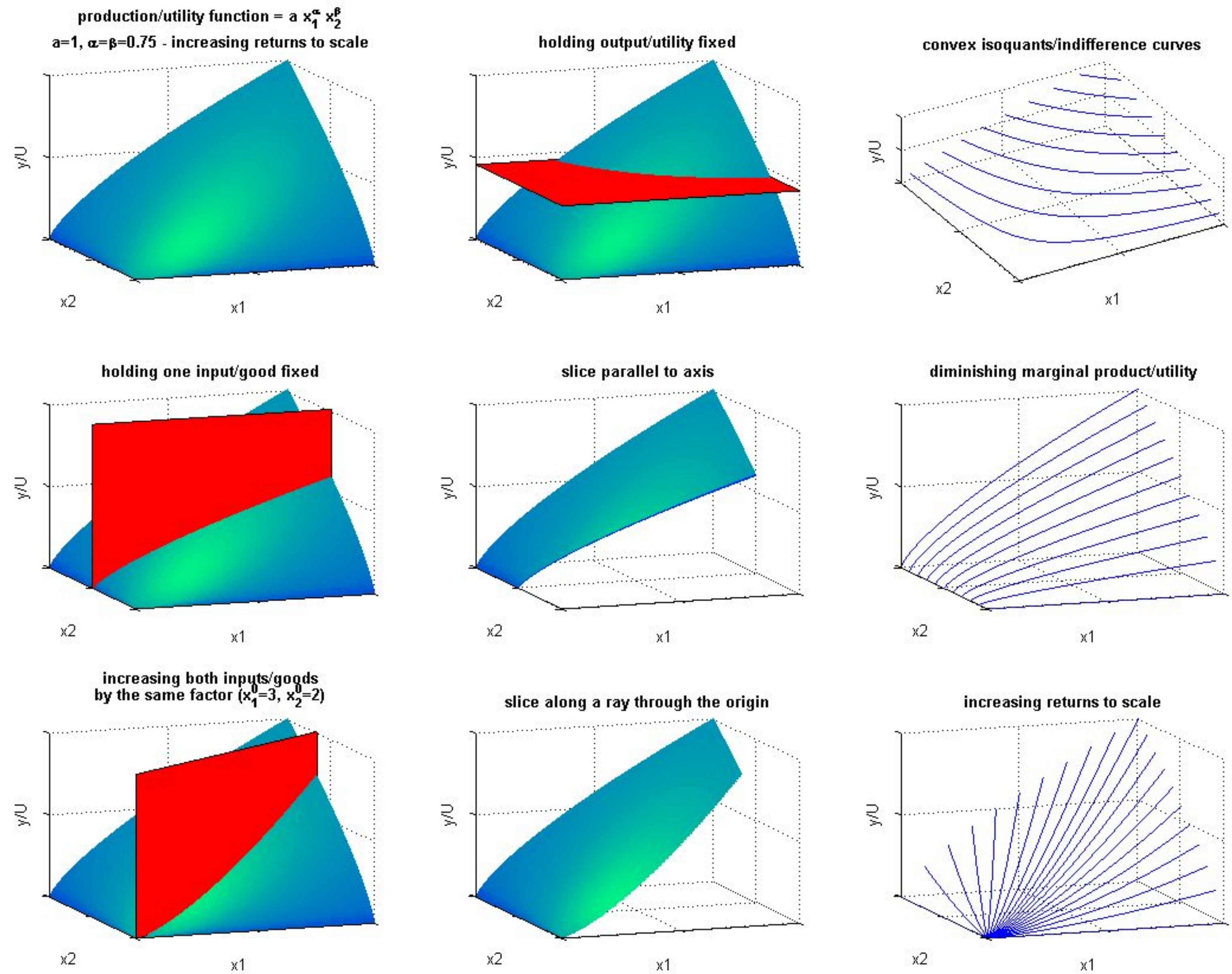
Constant returns to scale

(Weakly concave production/utility function)



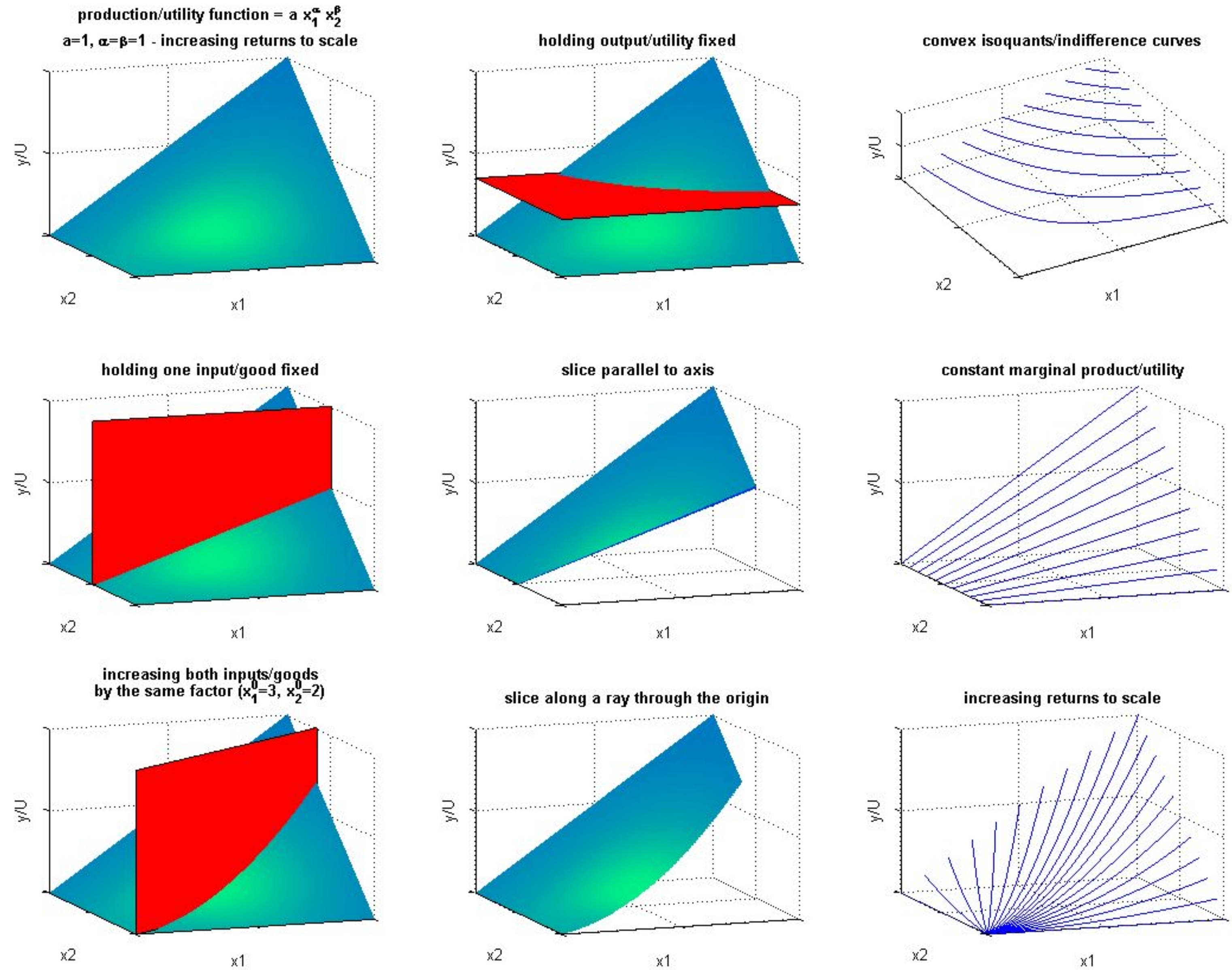
Increasing returns to scale with diminishing marginal product/utility

(Quasiconcave production/utility function)



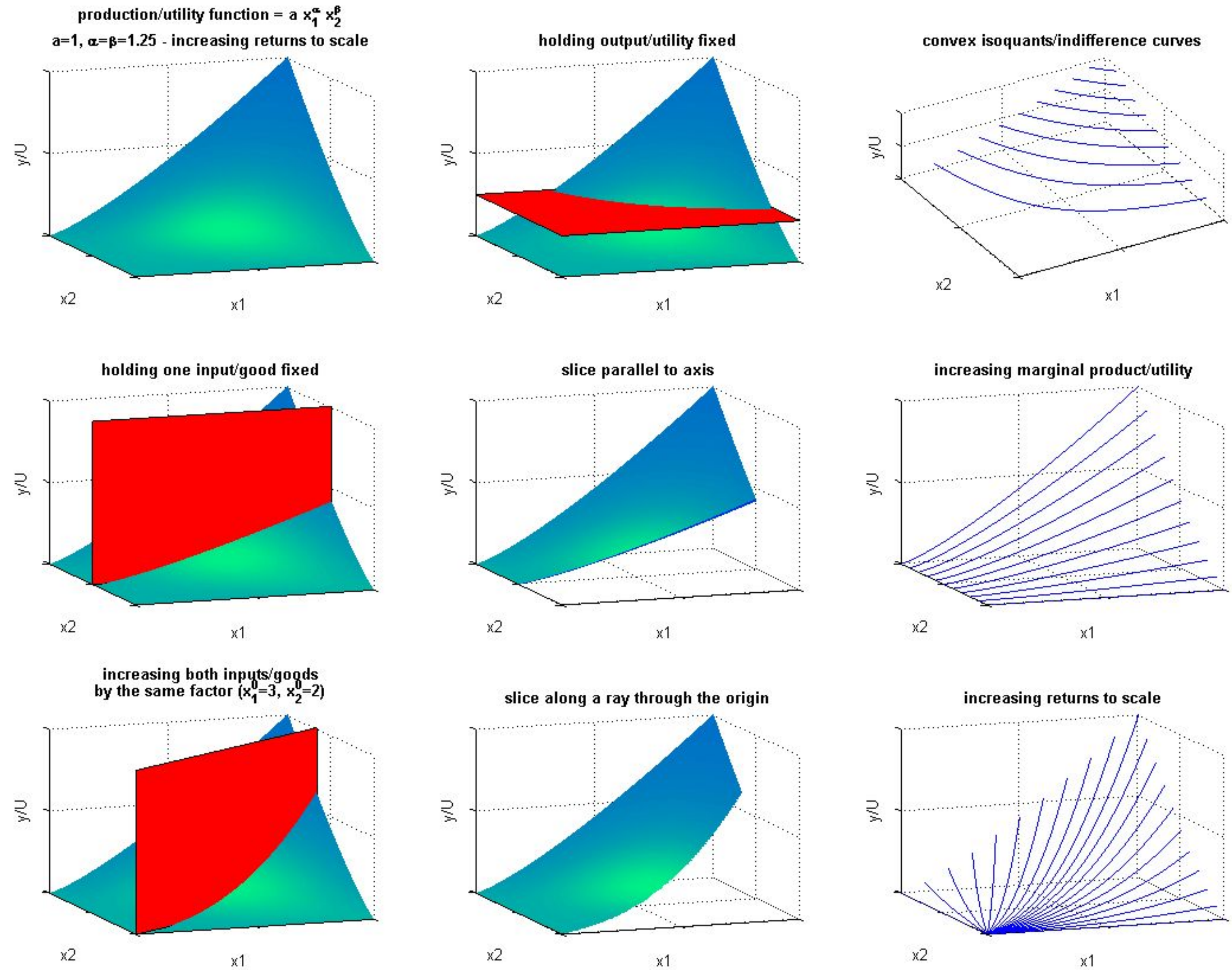
Increasing returns to scale with constant marginal product/utility

(Quasiconcave production/utility function)

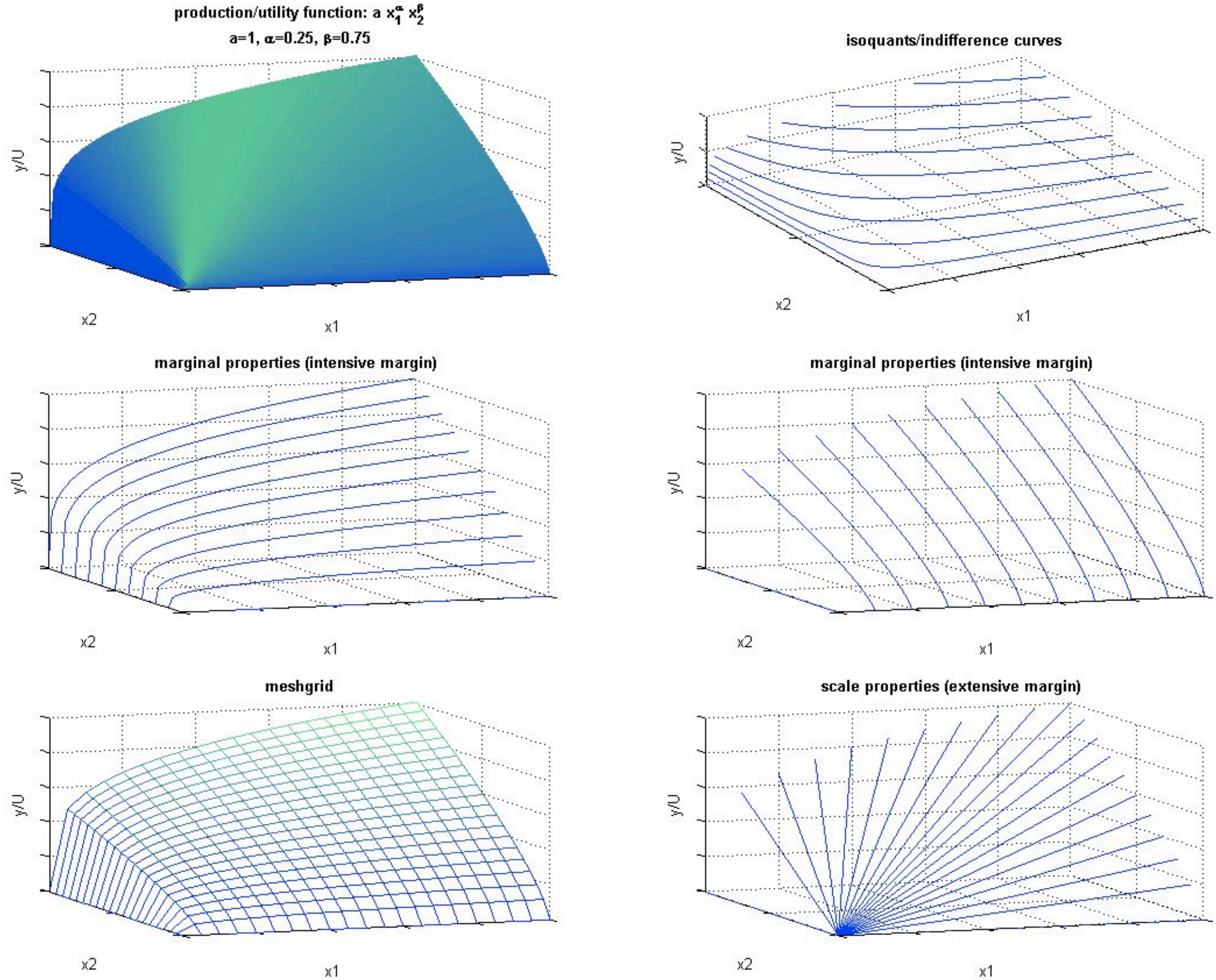


Increasing returns to scale with increasing marginal product/utility

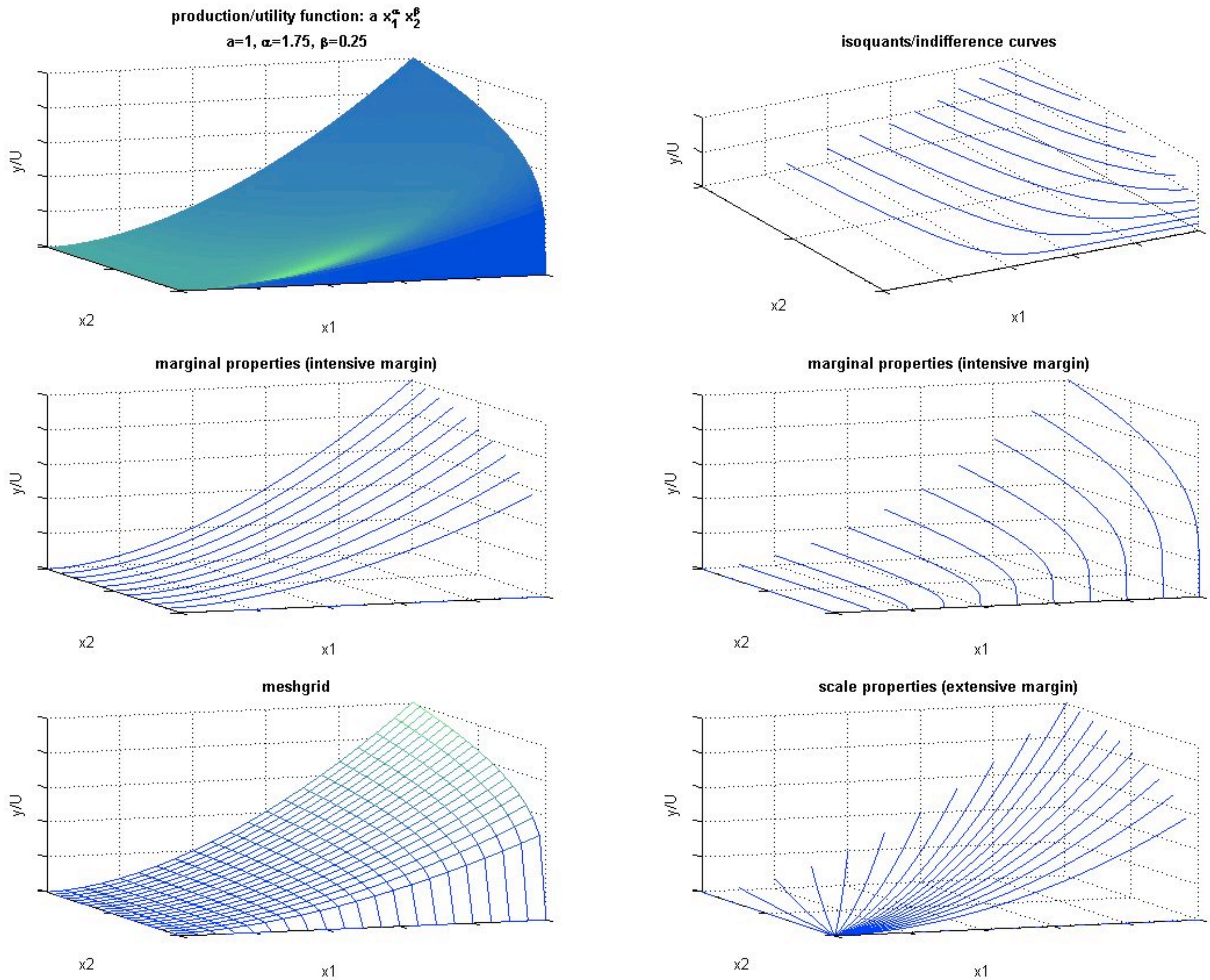
(Quasiconcave production/utility function)



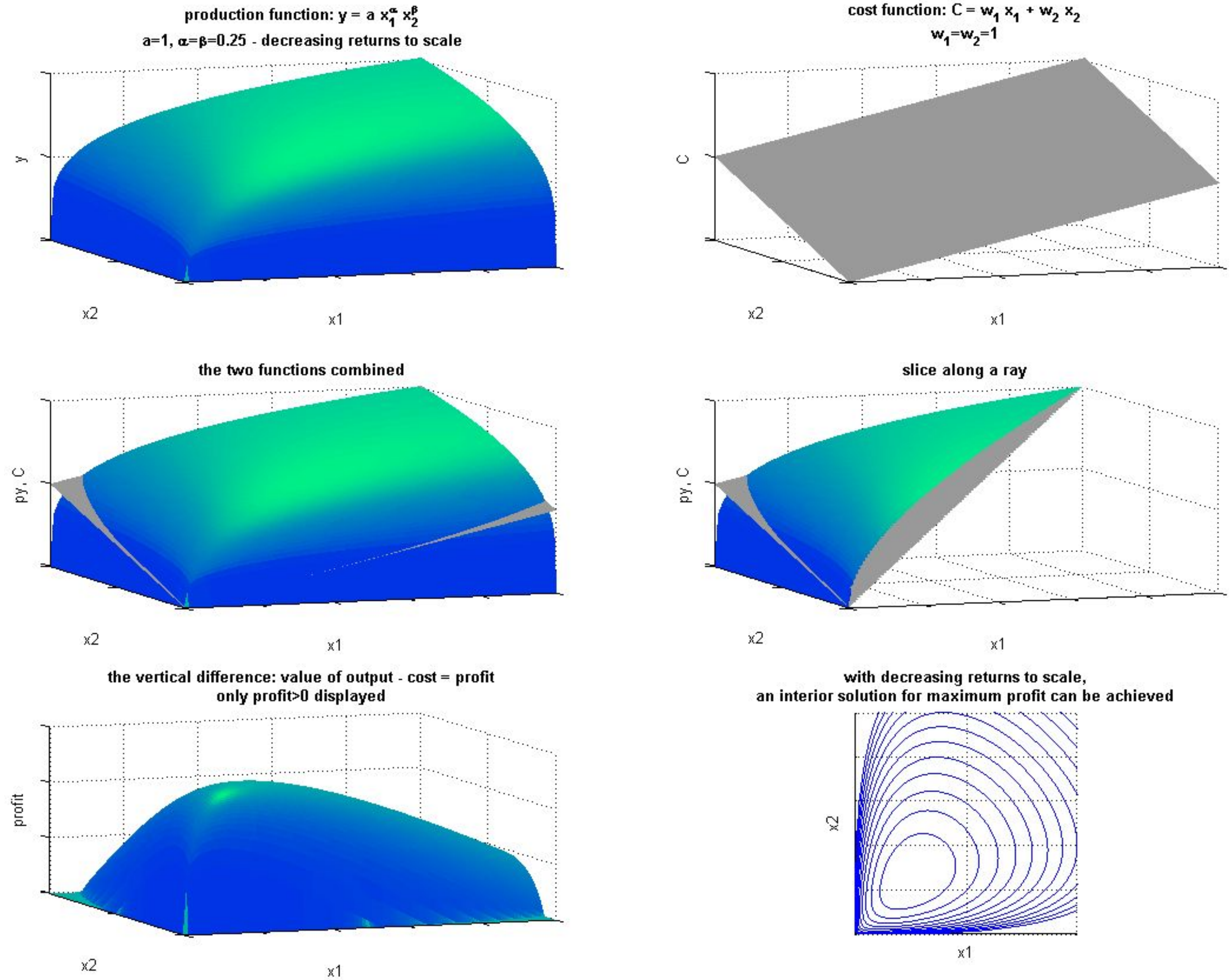
<u>Non-symmetric production/utility function with constant returns to scale</u>



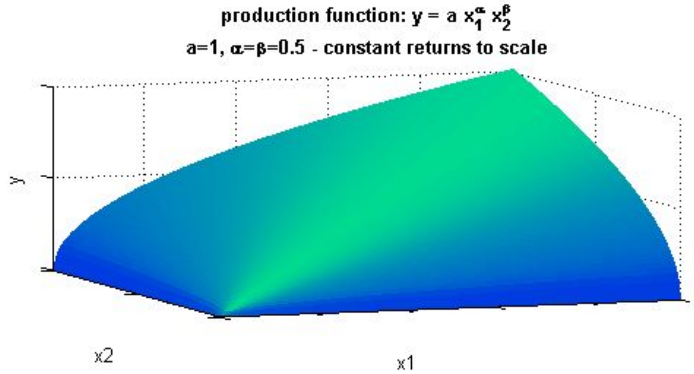
Non-symmetric production/utility function with increasing returns to scale

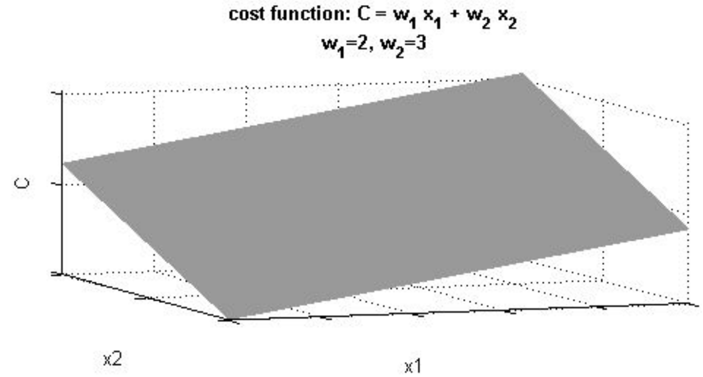


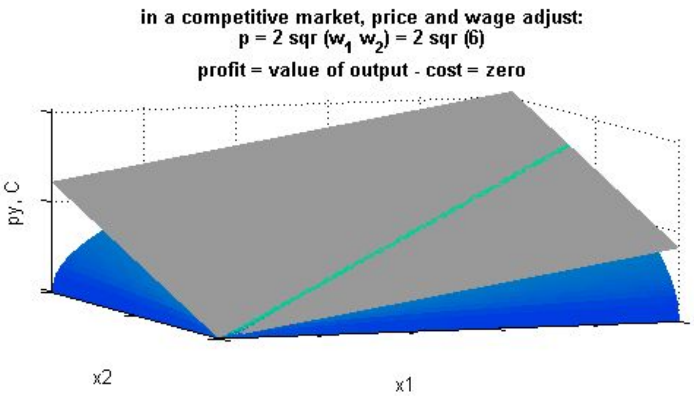
Profit maximization: production function with decreasing returns to scale

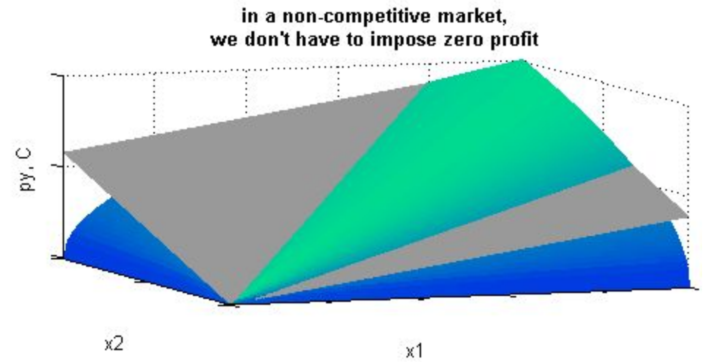


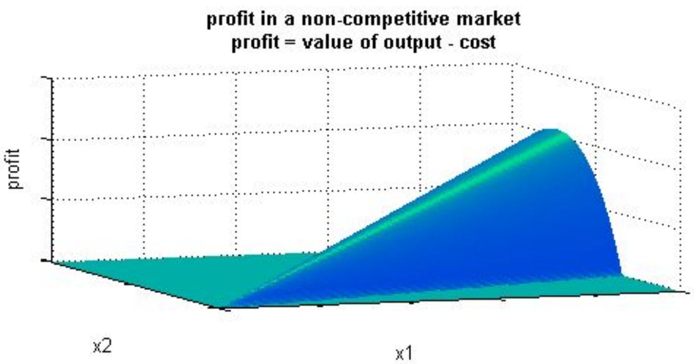
<u>Profit maximization: production function with constant returns to scale</u>

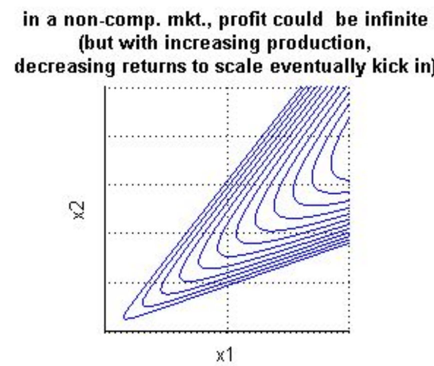




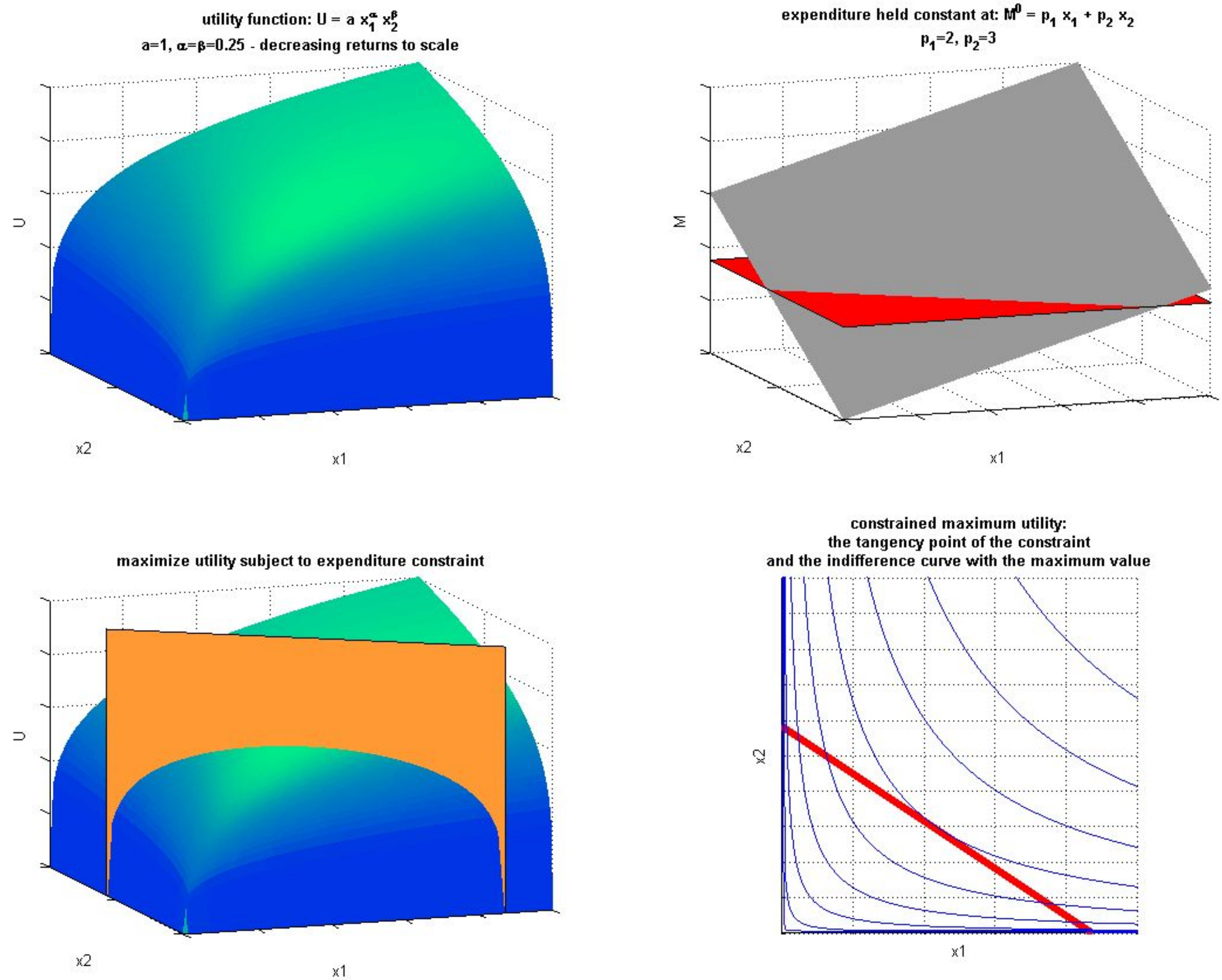




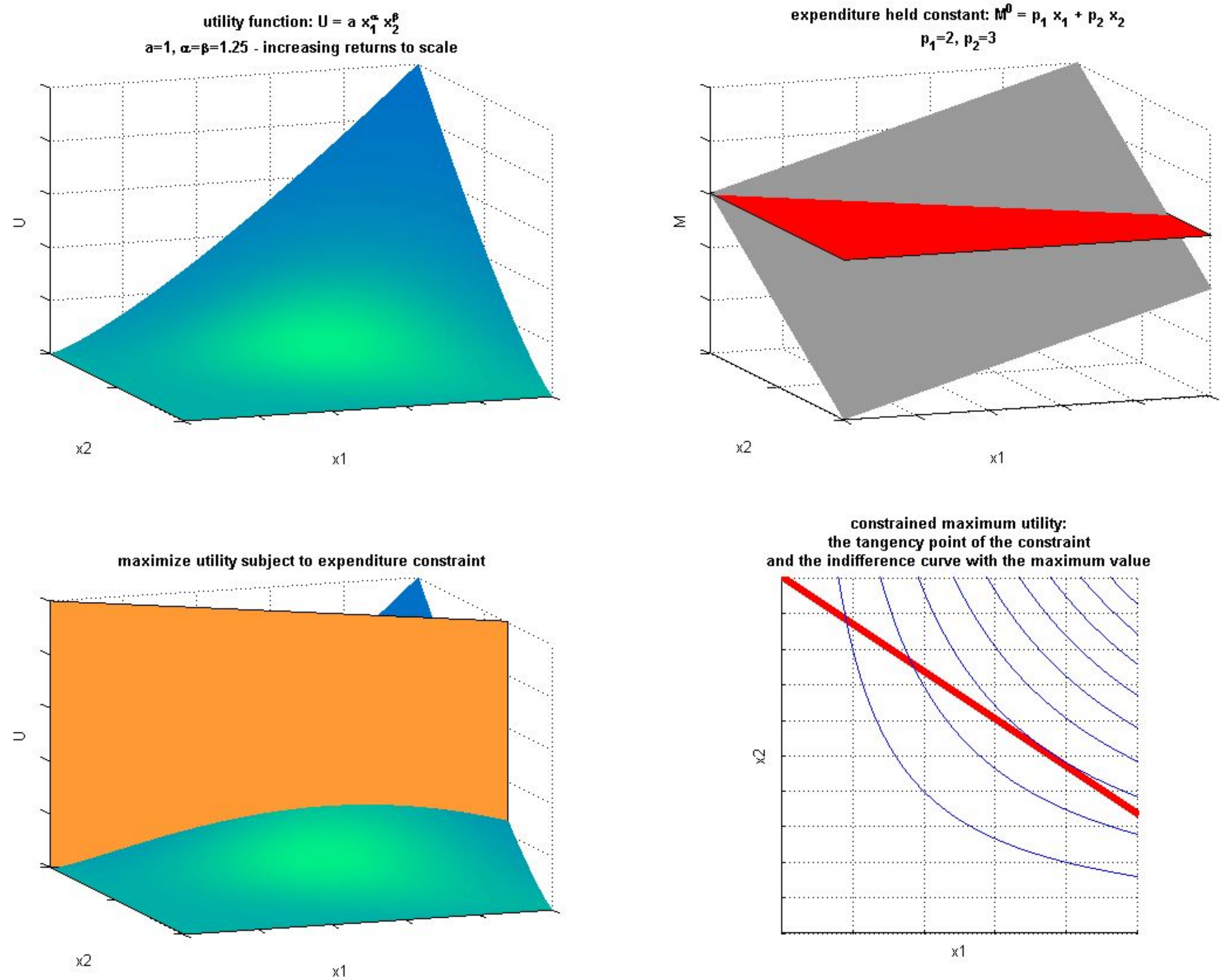




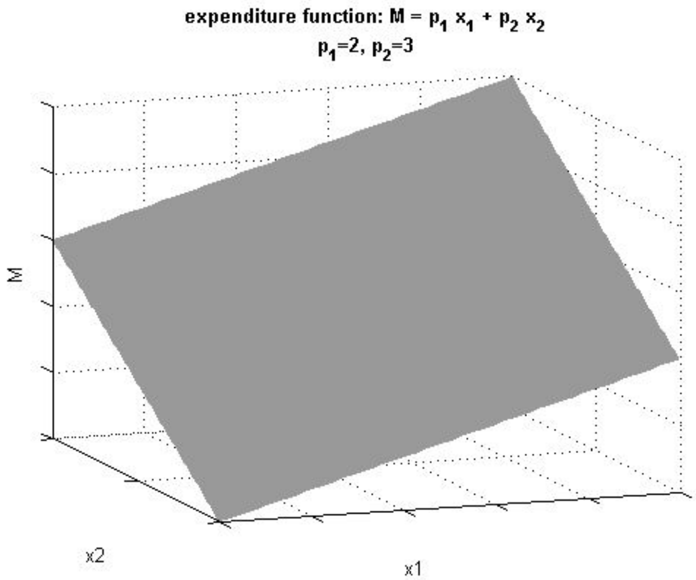
<u>Utility maximization: utility function with decreasing returns to scale</u>

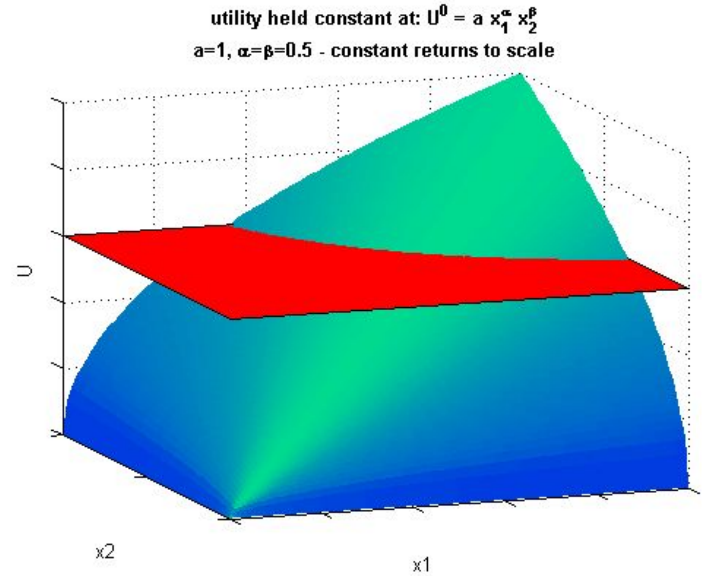


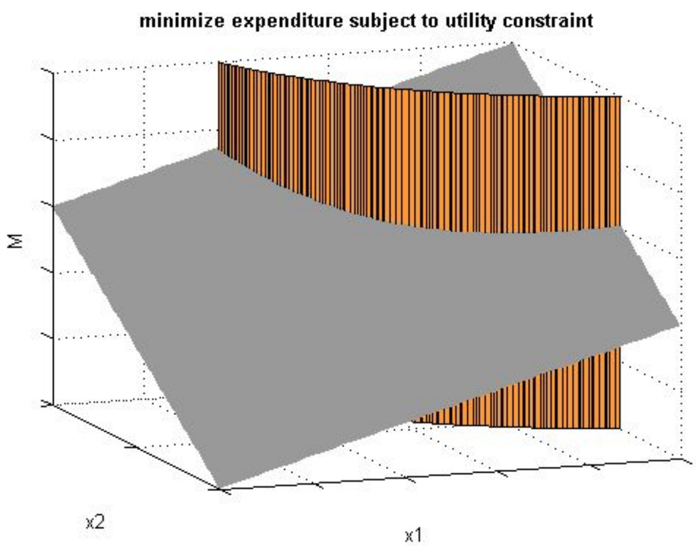
Utility maximization: utility function with increasing returns to scale

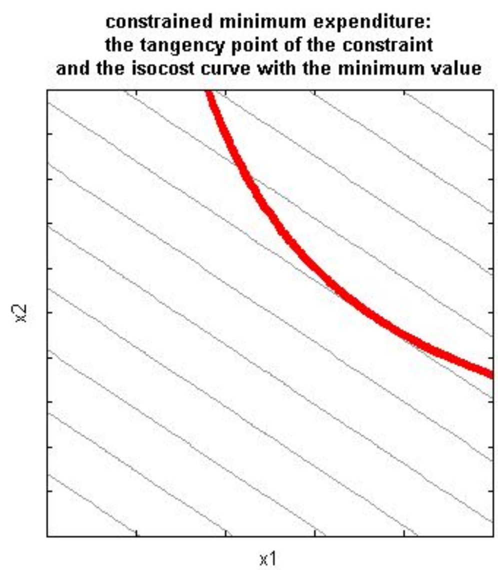


Expenditure minimization: utility function with constant returns to scale









Literature and further reading:

The Structure of Economics, 3rd ed., Eugene Silberberg
MATLAB Documentation, MathWorks

[Anatomy of CES Functions in 3D]
[Printable version of this document (.pdf format)]

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