# HW5 – Theoretical questions

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1. Use Lagrange Multipliers to find the maximum and minimum values of the function subject to the given constraints:
   1. ; constraint: 2
   2. ; constraint:
   3. ; constraints:
2. Show that any Kernel function is symmetric, i.e.
3. Find the Kernel function for the following mapping:

1.b.

Constraint  thus 



 Thus: We get: 

With alpha: and 

2 Points: 

2. Proof:



3.b.

Define: 

Proof:

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