**Separable Equations**

Suppose have integral equation of the following form,



and the a’s and b’s are linearly independent. Filling in the kernel, we have,



and so we see that,



So then filling in this form into the original integral equation, and integrating over b­m(y) we obtain the set of equations,



where,



**Example**

For example, let’s do:



Checking,



**Example**

Now let’s do:



Checking,



**Example**

Consider,



We would try ψ(x) = ax + bx2. So,



So we have the coupled linear equations:



So,



So altogether,



Have to double check at some point.