We use techniques from measure theory to provide solutions to a certain class of integral equations. Specifically, we show that with a simple transformation, the kernel, k(t, x), of the integral equation can be treated as if it is the conditional probability density of t, given x. Then the left hand side of our integral equation can be treated as if it is the conditional expectation of the unknown function, f(t). Application of certain inequalities from probability theory and a little manipulation enables us to find f(t). (Received September 26, 2005)