1059-47-88 **Rod Freed*** (gauss12@hotmail.com), 12939 Bonaparte #7, Marina Del Rey, CA 90066. *Green's Function and the Inverse of a Differential Operator.*

Let L2m([0,inf)) denote the space of L2 functions on [0,infinity)into Cm, and let F be the differential operator in L2m([0, inf))associated with f'(t) = Df(t), where f(0) is in B, a subspace of Cm. We prove that D has no eigenvalues on the imaginary axis and that Cm is a direct sum of Ker(R) and B (where R is the Riesz projection of D corresponding to the eigenvalues of D in the open left half plane) if and only if F is invertible. Also, we show that the inverse, G(h), of F is the operator which is the integral of g(t,s)h(s)with respect to s, where g(t,s) is exp(-tD)(I-P)exp(sD) for s<t and is -exp(-tD)P exp(sD) for t<s, where P is the projection of Cm along Ker(R) onto B. (Received February 18, 2010)