
Information That May Be Useful

Note: On this test, you may assume that for the BVP

$$F'' + \lambda F = 0,$$

the only nontrivial solutions are obtained for the case $\lambda = \mu^2 > 0$, and the corresponding solutions are

$$F(x) = c_1 \cos(\mu x) + c_2 \sin(\mu x),$$

without showing any work.

Possibly useful identities:

$$\cos(A) \cos(B) = \frac{1}{2} (\cos(A + B) + \cos(A - B))$$

$$\sin(A) \sin(B) = \frac{1}{2} (\cos(A - B) - \cos(A + B))$$

$$\sin(A) \cos(B) = \frac{1}{2} (\sin(A + B) + \sin(A - B))$$