8-2

THE FIRST 3 LAGUERRE POLY'S ARE

$L_0 = 1$

$L_1 = -x$

$L_2 = x^2 - 4x + 2$

SHOW (THAT) ORTHO OVER $x \in [0, \infty]$ RESPECTIVE TO WEIGHT FUNCTION

$w(x) = e^{-x}$

WHAT IF FOR

$$\langle \alpha, \beta \rangle = \int_{-1}^{1} \alpha \cdot \beta \, dx$$

ONE ATTACHED TO eq. INTEGRAND.

$$\langle \alpha, \beta \rangle = \int_{-1}^{1} \alpha \beta e^{-x} \, dx$$

IF [illegible] LAGUERRE POLYS

[illegible] ORTHO TO INNER PRODUCT,

$$\langle f, g \rangle = \int_0^\infty f(x) \, g(x) \, e^{-x} \, dx$$

WEIGHT

THEN IT MUST BE TRUE THAT ...

IF 'LAGUERRE POLYS' ARE

L_n

$\langle L_n, \langle f, g \rangle \rangle = \phi$

...?