7

CONSIDER,

$$\int_0^1 x e^{-x^2}\,dx$$

$\rightarrow f(x) = x e^{-x^2}$

USE A 4-POINT GAUSS RULE

APPROX INTEG.

MUST MAKE A Δ OF INTERVAL

$[0, 1] \longrightarrow [-1, 1]$

I DO THIS ANALYTICALLY FIRST,

$$\int_0^1 x e^{-x^2}\,dx = \int_{-1}^{1}$$

... $f(x) = \emptyset$ WHEN $x = \emptyset$

SO IF $x(1) \longrightarrow -1$

$f(x) = \emptyset$ FOR $x = -1$

$0 \rightarrow 1$