3
a

WHEN $x \approx \pi$, ~~CANCELLA~~

LOSS OF SIGNIFICANT DIGITS OCCURS:

$$f(3.141) = 1.000 + \cos(3.141)$$

$$\cong 1.000 - 0.9999 \quad \text{(W/ CHOPPING)}$$

$$= 1 \times 10^{-4}$$

$f(x)$ SHOULD BE REFORMULATED AS

$$f(x) = 2\cos^2\left(\frac{x}{2}\right)$$

SO THAT NEAR $x = \pi$,

$$f(3.141) = 2\cos^2\left(\frac{3.141}{2}\right)$$

$$\cong 0.000$$