

9. (CONT) MUST USE V.P. (NON-CONSTANT COEFFS).

$$y_1 = t, y_2 = t^2, g = 1, W = \det \begin{vmatrix} t & t^2 \\ 1 & 2t \end{vmatrix} = t^2 \neq 0$$

$$- \frac{y_2 g}{W} = - \frac{t^2 \cdot 1}{t^2} = -1 \Rightarrow u_1 = -t$$

$$\frac{y_1 g}{W} = \frac{t \cdot 1}{t^2} = \frac{1}{t} \Rightarrow u_2 = \ln t$$

$$y_p = u_1 y_1 + u_2 y_2 = (-t)(t) + (\ln t)(t^2)$$

$$y_p = t^2(\ln t - 1)$$

10. U.C.: $g(x) = e^{-x^2} \sec x$ - DERIVATIVES

HAVE ∞ MANY FUNCTION TYPES :C

$$\text{V.P. : } y_1 = \cos x, y_2 = \sin x, W(y_1, y_2) = 1, g(x) = e^{-x^2} \sec x$$

$$u_2 = \int \frac{y_1 g}{W} dx = \int \frac{(\cos x)(e^{-x^2} \sec x)}{1} dx$$

$$= \int e^{-x^2} dx - \text{NO ELEMENTARY}$$

ANTI-DERIVATIVE :C AGAIN.