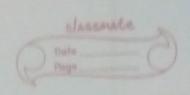


 $P.T = \int xV = \begin{cases} x - 1 \cdot f(0) \end{cases} \times \int .V$ = 12 sinx -> type & because x -> not a trigo/exponential for => D= \-4 : D=+2i,-2i -> X=0, B=2 For $C \cdot F = C \cdot F = 2 \left(\frac{100}{5} \beta x + \frac{1}{5} \sin \beta x \right)$ $= 2 \left(\frac{1}{5} \cos 2x + \frac{1}{5} \sin 2x \right)$ $\Rightarrow C \cdot F = \frac{1}{5} \cos 2x + \frac{1}{5} \sin 2x$ FOR P.I - P.I = 1 x sink $= \frac{1}{f(D)} \left(\frac{1}{f(D)} + \frac{1}{f(D)} \right) = \frac{1}{f(D)} = \frac{1}{f(D)}$: $P.I = \{z - 20\}$. 1 sinx $p^2 + 4$ $\}$ (-1)+4 General sol giran by y = 4 costx + 5 sintx + x sinx - 2 cosx

Ja. dy - 2 dy ty = x exsinx Sel: $(D_g - 2D + 1)y = x \in Sinx$ Whenever there is e after in , we write it as ex.

. (D-2D+1) y = e x sinx FOR AE: - D^-2D+1 = 0 2)(D-1)^2=0 -'.D=1, 1 (repeated) For CF - C.F = (q+gx)ex $\frac{\text{Por P.I:} \quad P.I = 1}{f(0)} e^{x} \cdot x \sin x$ there, ex. (xsinx) is of type ex. V (Type 4 $= e^{x}.$ | D2+1+20-20-2+1 $= e^{x} / \frac{1}{n^2} \cdot x \sin x$ Here, xsinx is of type & V (Type 5) Tet g(D) = D -> 1 x sinx 9(0)=20



$$P.T = e^{x} \left\{ x - 2D \right\}. \quad J \cdot sin x$$

$$= e^{x} \left\{ x - 2 \right\}. \quad J \cdot sin x$$

$$= e^{x} \left\{ x - 2 \right\}. \quad J \cdot sin x$$

$$= e^{x} \left\{ -x sin x + 2 \right\}. \quad Sin x \quad J \cdot sin x$$

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$$P \cdot I = e^{x} \left\{ x - 2D \right\} \quad \text{I sink}$$

$$= -e^{x} \left\{ x \sin x - 2D \left(\sin x \right) \right\}$$

$$= -e^{x} \left\{ x \sin x - 2D \left(\sin x \right) \right\}$$
Here, $D^{2} = -1$ [:Type 2]

$$P - I = -e^{x} \left\{ x \sin x - 2 \cos x \right\}$$

$$= -e^{x} \left\{ x \sin x + 2 \cos x \right\}$$

H For mix types like these, you have to identify the types in the expression.

Solve it via breakdown of expression

Here, Type 4 -> Type 5 -> Type 2