

En cuentre la solución general de cada una de las

A. y" 1 y = 2 e 3x | || Ecuación diferenciales no homogeneas

Método de aniquiación

l'Encontrar otra fonción que al sumarose de cero.

0[2e3x7

= 20 e3x // Derivamos

= 2[3e3x7

 $=6e^{3x}$

3 (2 e3x)=6 e3x //multiplicamos por (-1)

 $-3(2e^{3x}) = -6e^{3x}$

 $D[2e^{3x}] - 3(2e^{3x}) = 0$

 $[0-3](2e^{31})=0$

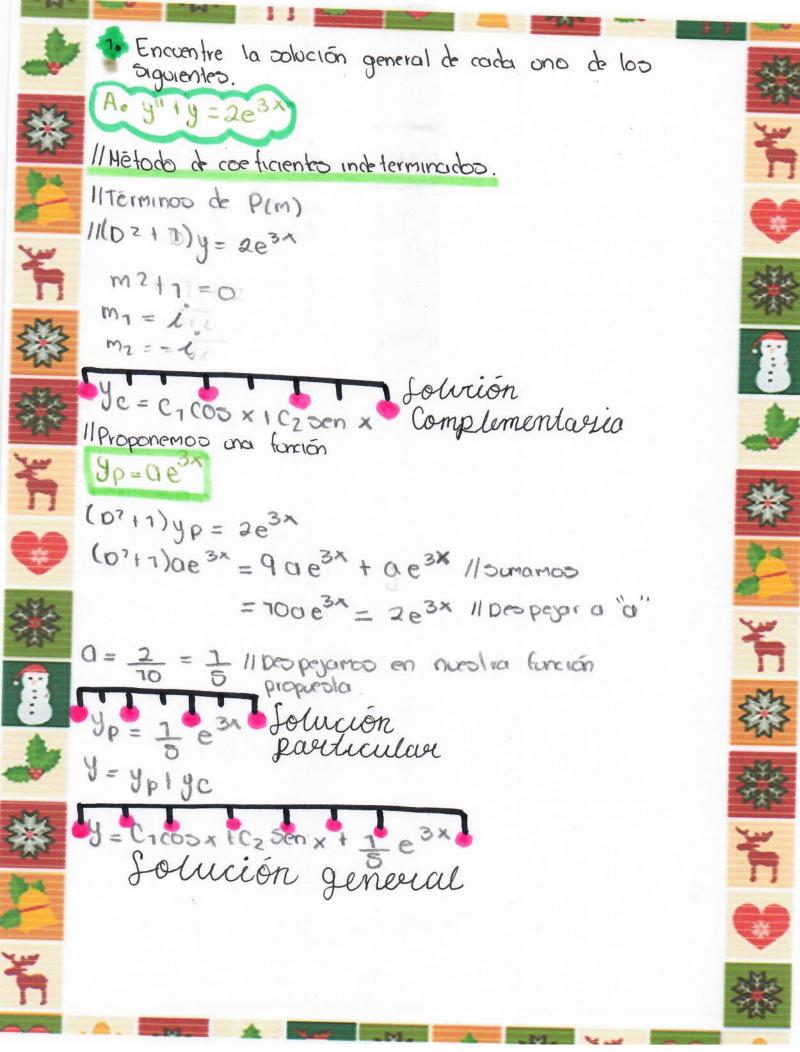
[0-3] y" +y =0 litérminos de operador

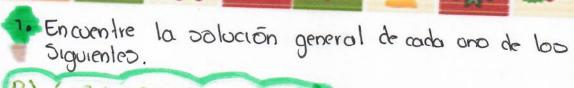
(D-3) (D2+1) y=0

literminos de Pm

Pm=(M-3)(M2+1)=0 $M_1 = 3$ $m^2 = -1 \mid \text{numeros} \right.$ $m = \sqrt{12} \mid \text{maginarios}$

y = C1e3 + C2 cos (x) + C3 sen(x) Solución general.





B) (02 12 D+7) y=45en 2x

11 Método de aniquilación

$$D^{2}(4 \operatorname{sen} x) = 4(-4 \operatorname{sen} 2x)$$

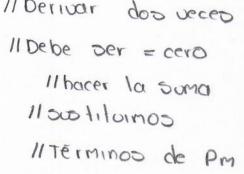
= -16 \text{ sen } 2x
-4(4 \text{ sen } 2x) = -16 \text{ sen } 2x = 0
(0214)(4 \text{ sen } 2x) = 0

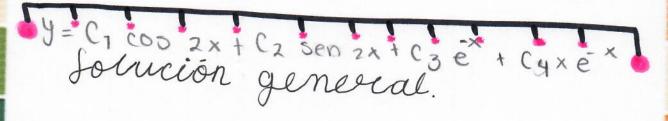
$$P_{m}=(m^{2}+4)(m^{2}+2m+1)=0$$

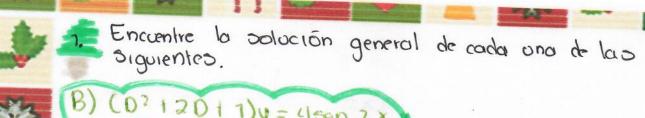
 $(m^{2}+4)(m+1)(m+1)=0$

$$M_1 = \sqrt{-9}$$
 $M_1 = 2\ell$
 $M_2 = -2i$
 $M_3 = -1$
 $M_4 = -1$
 $M_{10} = 2\ell$
 $M_{10} = 2\ell$

11 Derivar dos veces 11 Debe Der = cero Il hacer la soma 11 sustituinos







Método de coeficientes indeferminados.

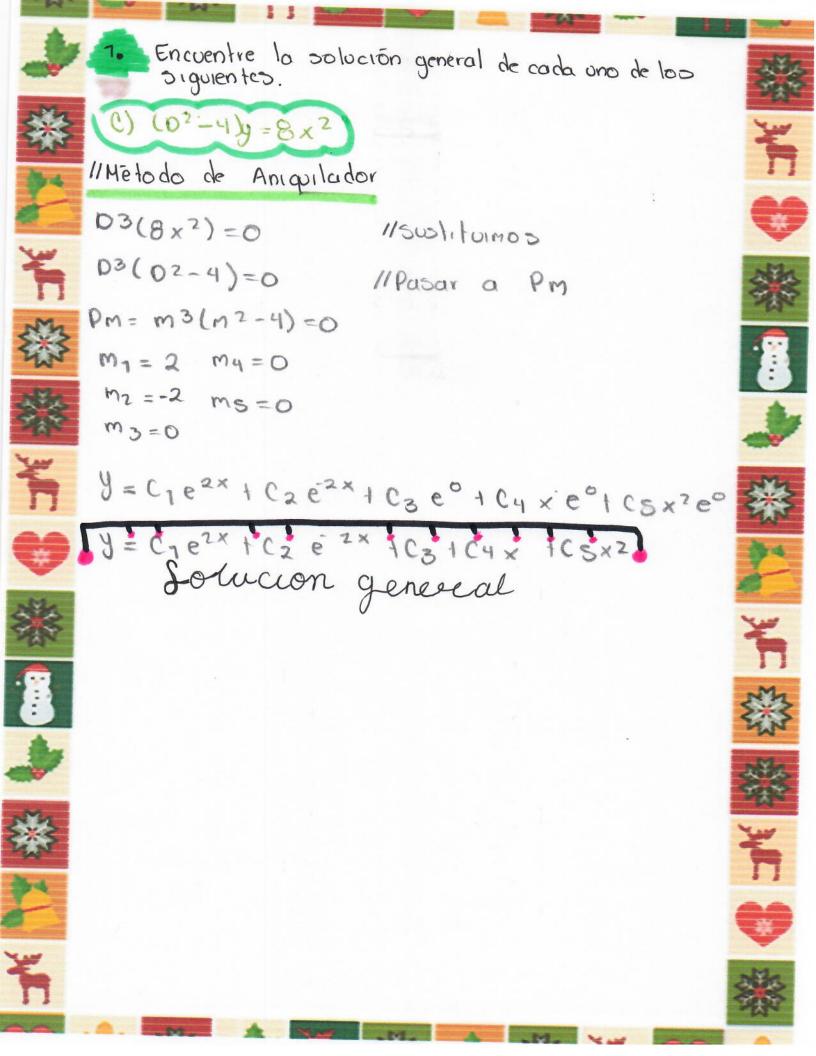
$$m^{2}+2m+1=0$$

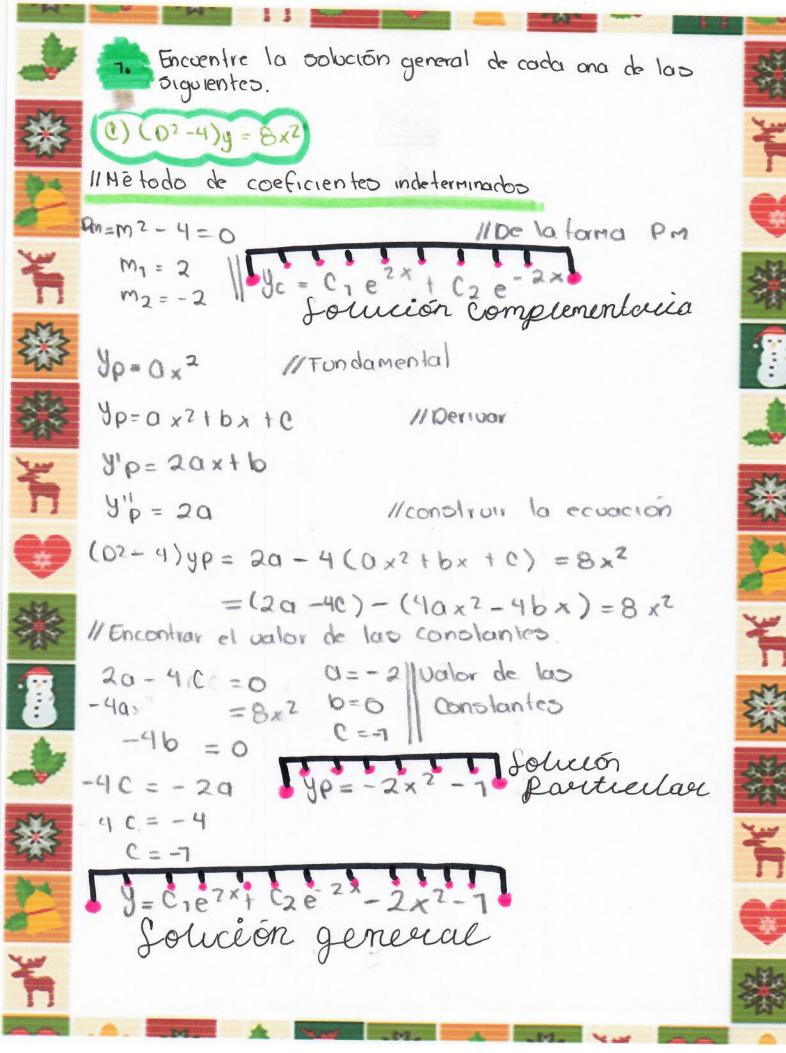
 $(m+1)(m+1)=0$
 $m_{1}=-1$ | Soluciones
 $m_{2}=-1$ | I guales.

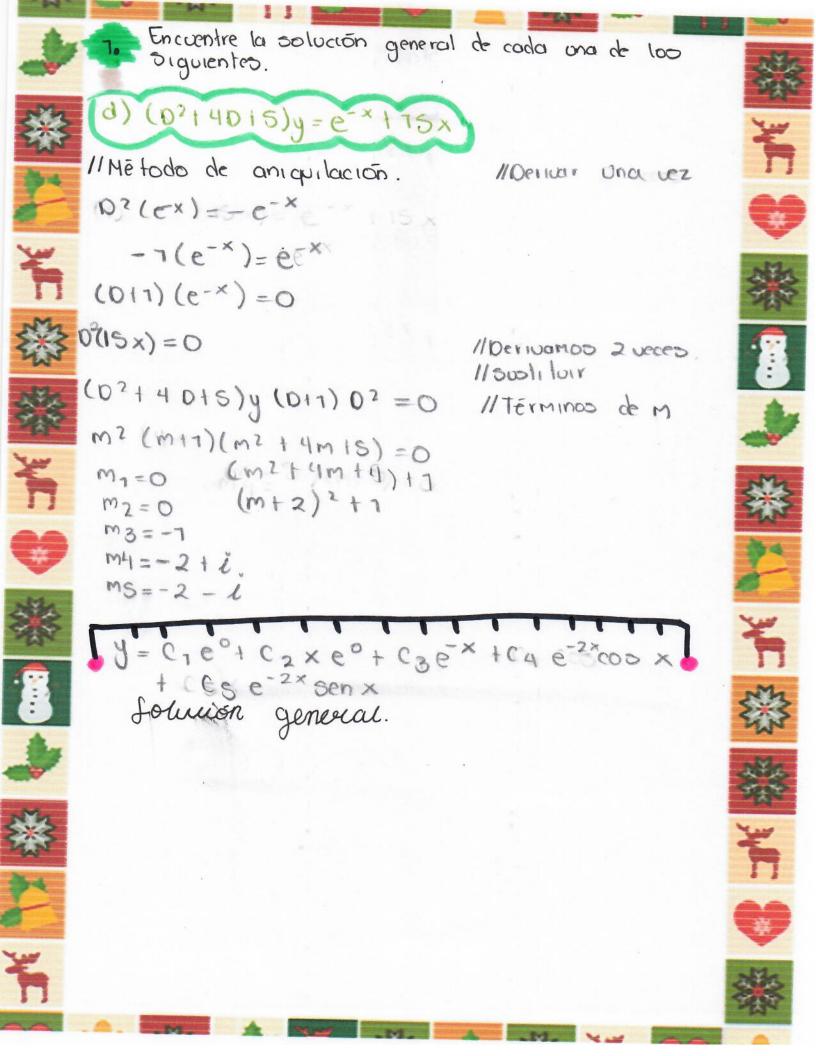
11 Proponemos una función

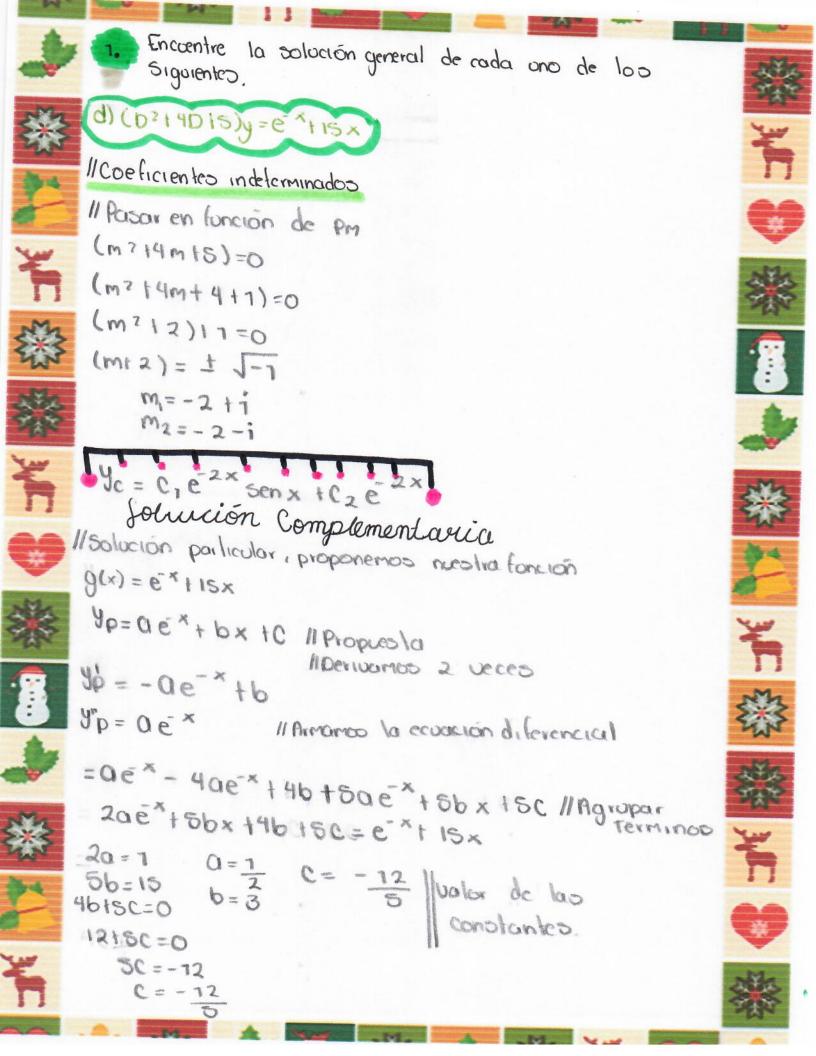
$$(0^{2}+20+7)=(-3A-4B)500\times +(4A-3B)\cos 2x$$

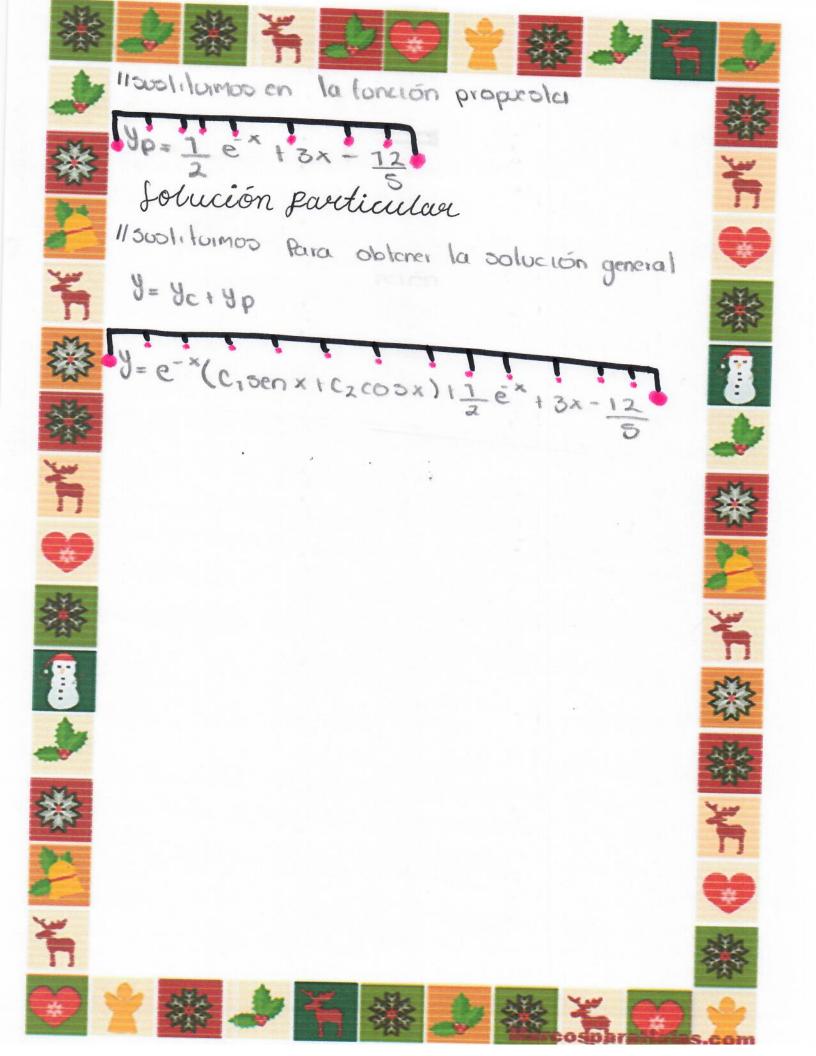


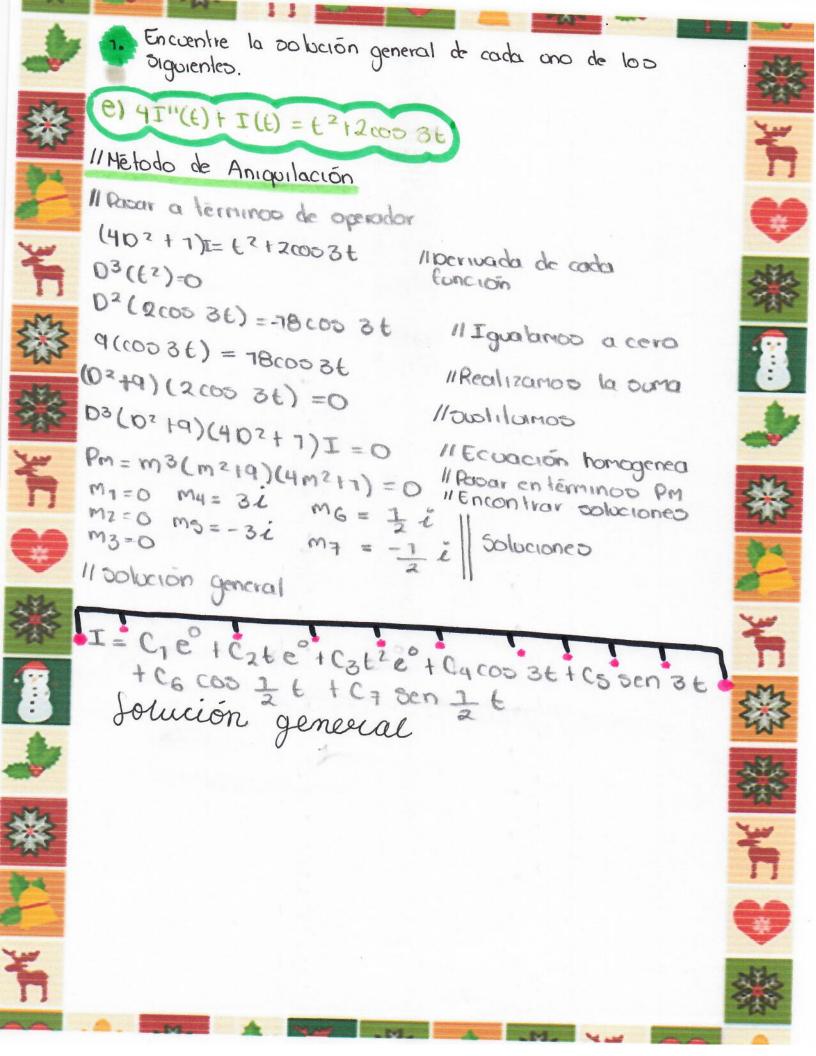


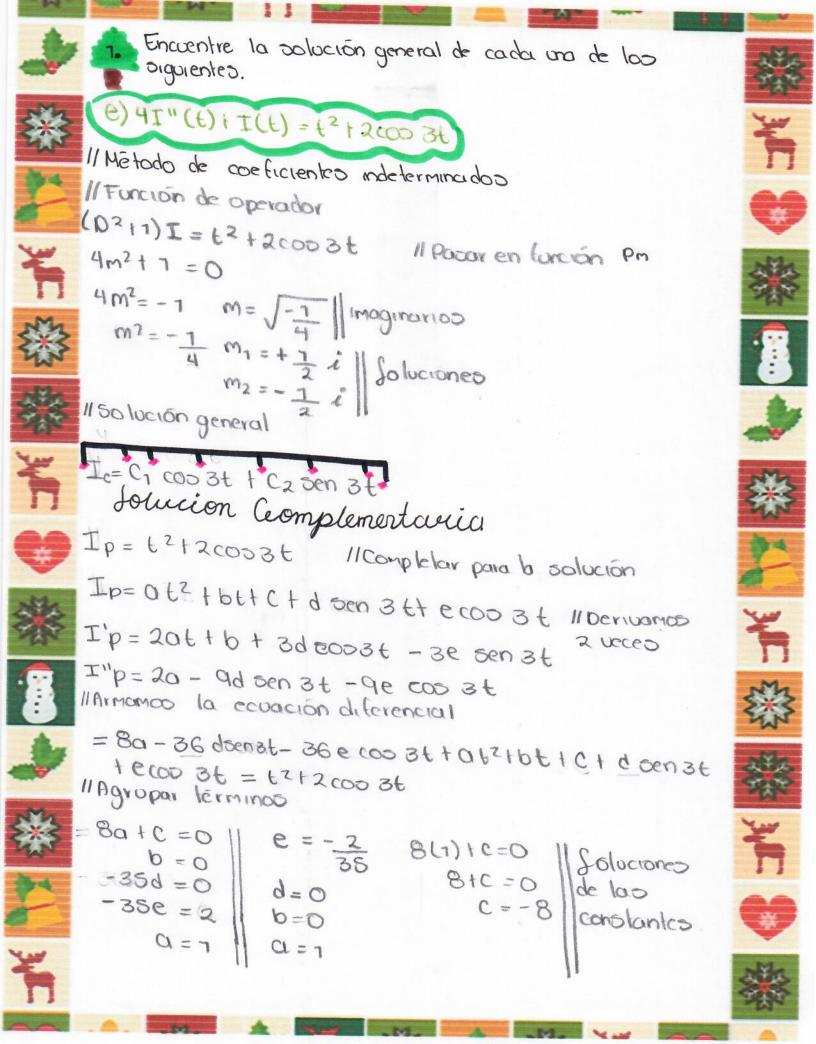




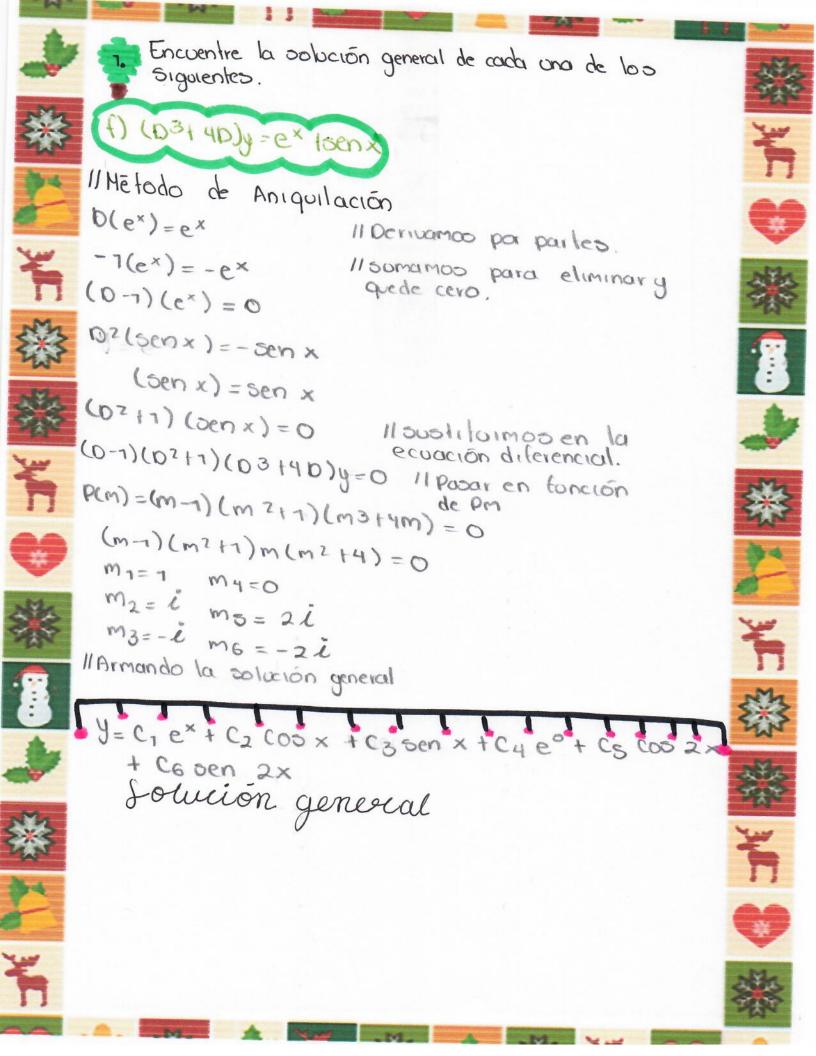


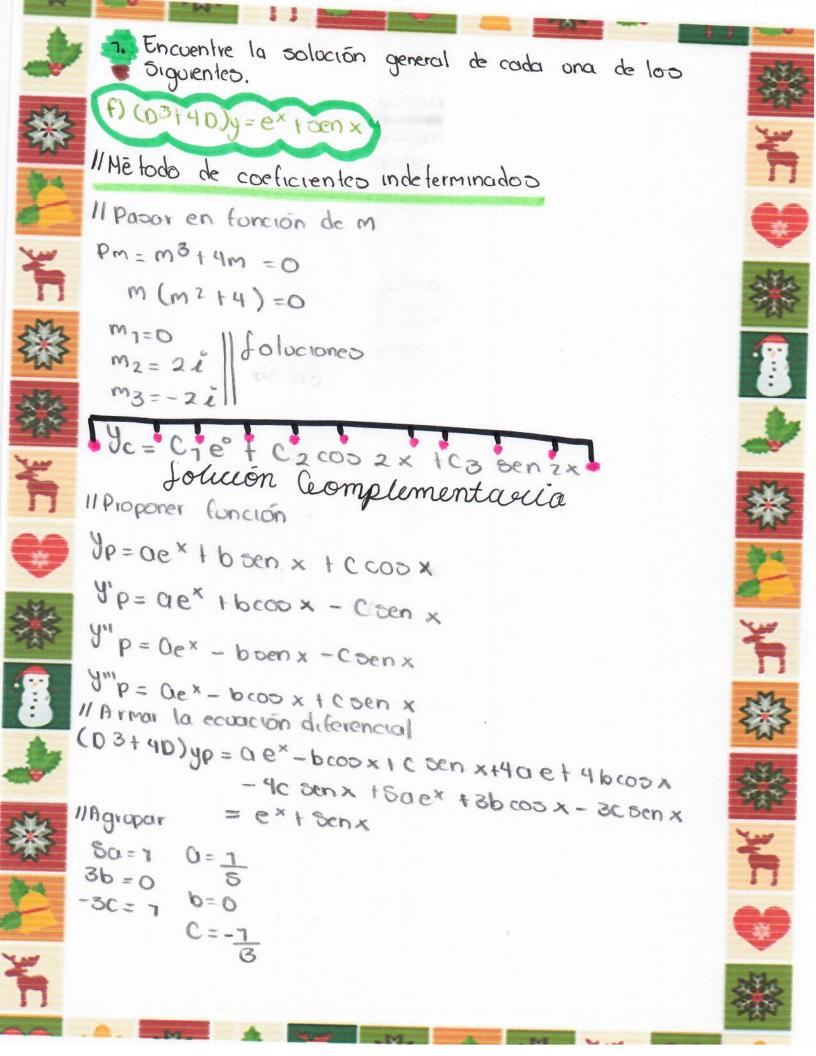




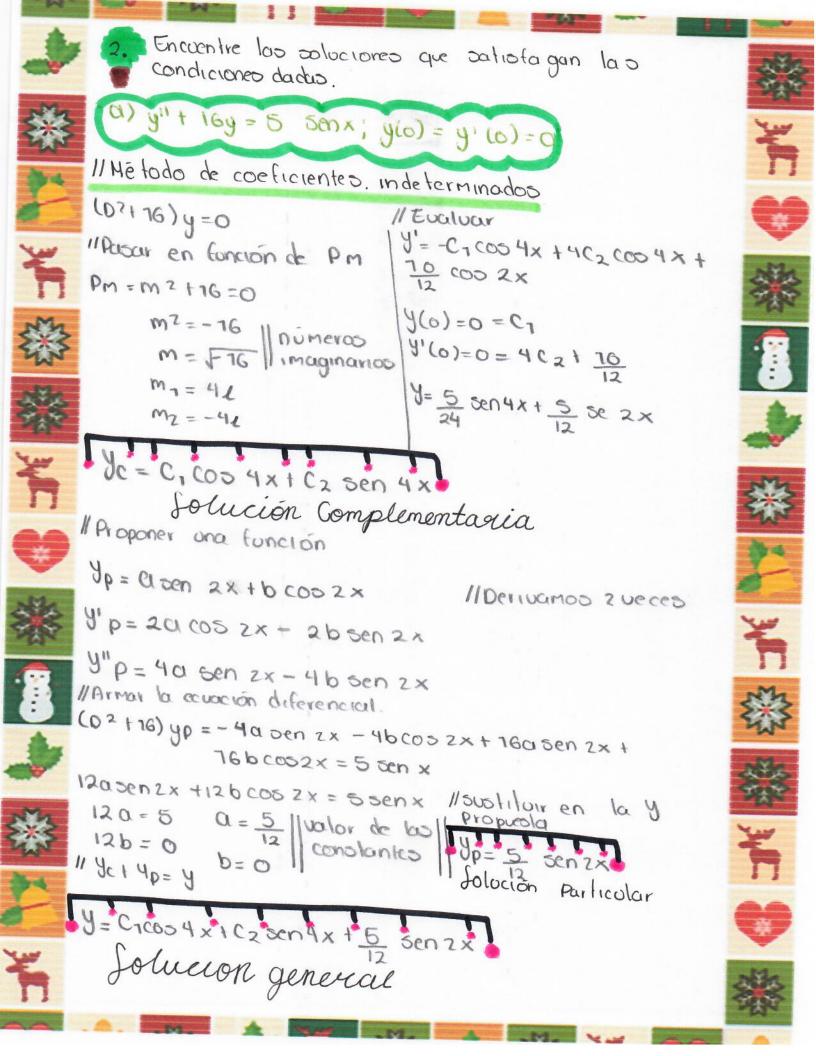


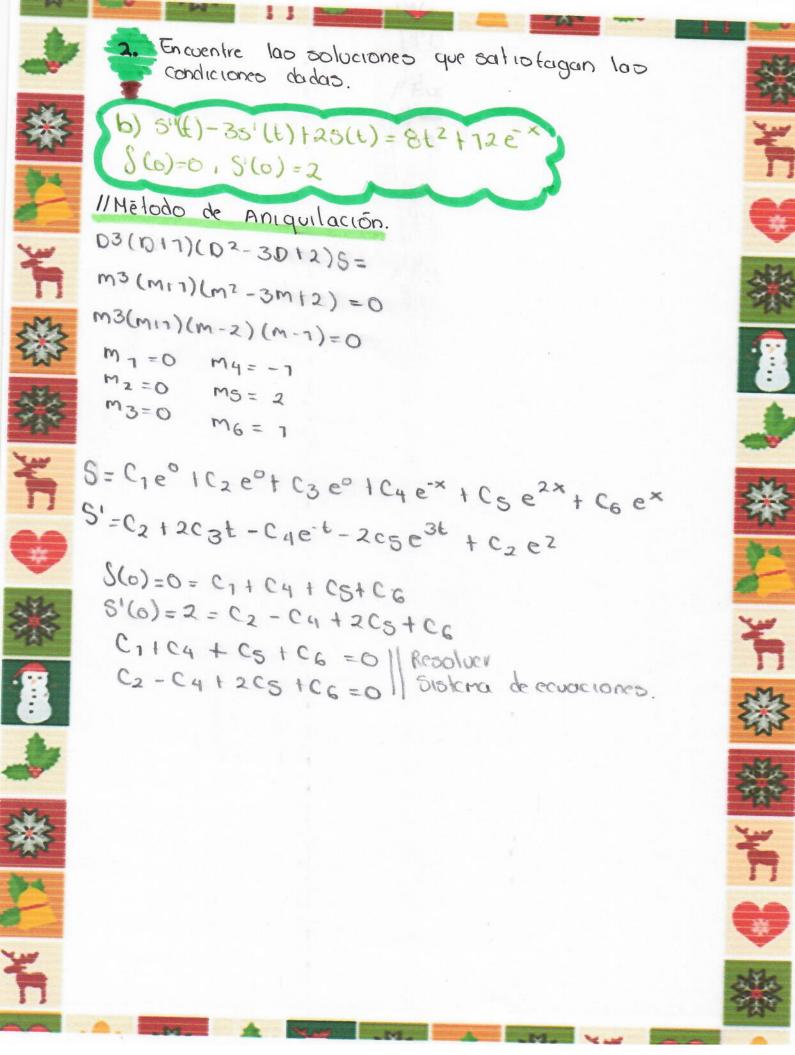


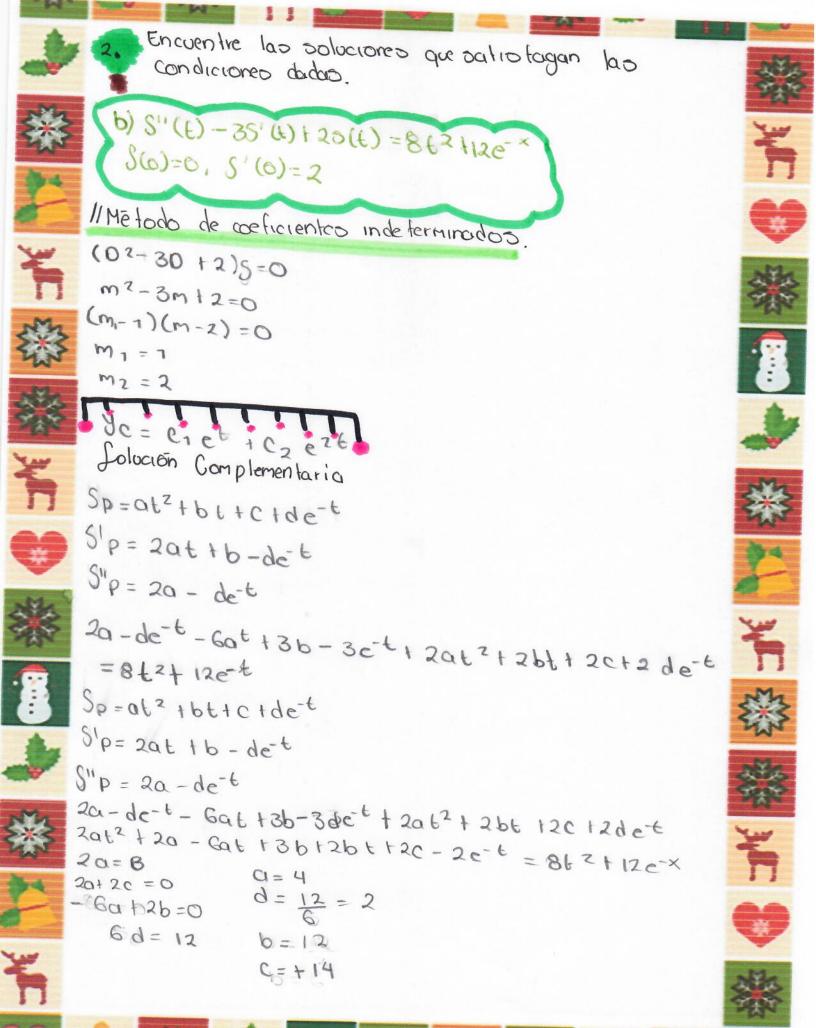












$$C_1 + 2C_2 + 8 = 2$$
 esperando

$$C_1 = 2 - 2C_2 - 10$$
 $C_1 = -2 - 2(8) - 10$
 $2 - 2C_2 - 10 + 16 = 0$ $C_1 = -24$
 $C_2 = 8$