ii) $F(x) = Ae^{mx}$ ise $y_p = Be^{mx}$ olarak secilmelidir. Eper

karakteristik derklemin k-tane kókú m ire

karakteristik derklemin k-tane kókú m ire

y_p = Bx ke mx olarak secilmelidir.

(iii) $F(x) = A_1 Sin(dx + p)$, $B_1 Gs(dx + p)$ verse. $A_1 Sin(dx + p) + B_1 Gs(dx + p)$ ise $A_1 Sin(dx + p) + B_1 Gs(dx + p)$ ise $Sin(dx + p) + B_1 Gs(dx + p)$ ise

3)

 $f(x) = e^{mx} P_n(x)$ ise yp = e x an(x) olarah secilmelidir. Karahterstik derklenn k-tane kóki míse yp = x k enx an(x), olavah secilmelidir. $F(x) = e^{mx} sh(\alpha x + \beta) / e^{mx} G(\alpha x + \beta)$ $e^{mx} \left[Sh(\alpha x+\beta) + Gs(\alpha x+\beta) \right]$ yp = emx[A Cosdx+Bshdx] olovah secilmelidin Eper karahteristih denkle-min k-tore höhi mitid sehlinde ise min k-tore höhi yp= xhemx [AGsXX+Bshdx] Olovak secilmelidir.

(6)

 $F(x) = P_n(x) Sih(dx+p), P_n(x)Gi(dx+p)$ Vi) Pr(x)[Cos(xx+p)+sin(xx+p)) isc Up = Qn(x) Cosdx + Rn(x) sindx s'e cilmelidir. Eper korakteriktih dellemin ktone listi Fix sellinde yp = xk [Qn(x) Cosdx+ Pn(x) sin dx) olorak secilmelidir. Vii) $F(x) = P_n(x) e^{mx} Cos(\lambda x + \beta) / --$ yp= Brixle mx Godx + Rrixle mx sindx claraly k-tore lish m+ix sellindeise yp= xemx[Q_(x)G)dx+Rn(xl&ihdx] sellinde seallmelidir.

(7)

Eper F(x), yukondaki ifadelerin toplamı seklihde ise bu durunda yp de bu seçinlerh toplamı seklihde olmalıdır.

$$\frac{\partial r}{\partial y} = e^{x} \quad \text{deth genel ast. be known}$$

$$r^{2}+1 = 0 \qquad r = \mp i$$

$$y_{h} = c_{1} \cos x + c_{1} \sin x$$

$$y_{p} = A e^{x} \quad \text{olarah secilmets dir.}$$

$$y_{p}' = A e^{x} \quad y_{p}'' = A e^{x}$$

$$2Ae^{\times} = e^{\times} \Rightarrow 2A = 1 \Rightarrow A = \frac{1}{2}$$

 $y_p = \frac{1}{2}e^{\times} \text{ olup}$

$$y_g = y_h + y_p$$

$$y_g = C_1 G_{JX} + C_1 S_1 h_X + \frac{1}{2} e^X$$

8

$$\hat{Q}_{1} = \frac{1}{2} + \frac{1}{2} = 3 \text{ snx} \quad \text{deah} \quad \text{gened G3. baha}$$

$$\hat{\Gamma}^{2} = 2r + 1 = 0 \implies (r - 1)^{2} = 0 \quad \hat{\Gamma}_{1} = \hat{\Gamma}_{2} = 1$$

$$\hat{Y}_{h} = \hat{\Gamma}_{1} e^{x} + \hat{\Gamma}_{1} x e^{x}$$

$$\hat{Y}_{p} = A \text{ shx} + B \text{ Gsx}$$

$$\hat{Y}_{p} = A \text{ Gsx} - B \text{ shx} \quad , \quad \hat{Y}_{p} = -A \text{ shx} - B \text{ Gsx}$$

$$\text{deallende yellerhe youll relate}$$

$$-A \text{ shx} - B \text{ Gsx} - 2A \text{ Gsx} + 2B \text{ shx} + A \text{ shx} + B \text{ Gsx} = 3 \text{ shx}$$

$$\text{olip} \qquad A = 0 \quad \hat{R} = \frac{3}{2} \quad \text{olaph bahasan}.$$

$$\hat{R}_{y} = \hat{Y}_{h} + \hat{Y}_{p}$$

$$\hat{Y}_{g} = \hat{Y}_{h} + \hat{Y}_{p}$$

$$\frac{3g - 3h + 3p}{3g = C_1e^{x} + G_1xe^{x} + \frac{3}{2}G_{3x}}$$

$$\hat{Q}_{1} \quad y'' + y = Shx \quad denk \quad genel \quad Got \quad kinhmin$$

$$\Gamma_{1}^{2} = 0 \Rightarrow \Gamma_{2} = +i$$

$$y_{h} = C_{1} C_{0} \times + C_{0} Shx$$

$$y_{h} = A_{2} Shx + B_{0} C_{0} \times Olarak \quad Sections \quad Jh$$

$$C_{a} C_{0} S_{1} \cdot A_{2} \cdot A_{3} \cdot A_{4} \cdot B_{0} C_{0} \times Jh$$

$$y_{h} = X \left(A_{3} Shx + B_{0} C_{0} \right) \quad olarah \quad Sections \quad Jh$$

$$y_{h} = X \left(A_{3} Shx + B_{0} C_{0} \right) \quad olarah \quad Sections$$

$$y_{h} = C_{1} e^{2x} + C_{1} e^{-x} \quad elde \quad eddin$$

$$y_{h} = C_{1} e^{2x} + C_{2} e^{-x} \quad elde \quad eddin$$

$$y_{h} = C_{1} e^{2x} + C_{2} e^{-x} \quad elde \quad eddin$$

$$y_{h} = C_{1} e^{2x} + C_{2} e^{-x} \quad elde \quad eddin$$

$$A = -\frac{1}{10} \quad B = \frac{1}{10} \quad olarah \quad elde \quad eddin$$

(10)

 $\frac{OF}{y''+y'-6y} = shx + xe^{ix}$ Yg = ! $\Gamma^2_{+\Gamma-6=0} \Rightarrow \Gamma_1 = -3, \Gamma_1 = 2$ Yh = Cie + Cie xx yp = Ashx+BGIX+Xelx(cx4) olaah Secilmelidir. Köhler iande Der tone 2 vor. Sorrasinda türevler alimp denklende yerlerine $C = \frac{1}{19} \quad D = -\frac{1}{2r}$ yatılırsa $A = -\frac{7}{50}, D = -\frac{1}{50}$ olarah bulunux

Or y"+6y+13y = Xe shrx + X2e 2xsh3x yp=? (Sadece nasil sesilmesi gerektipini belirtinit. Katsayıları bulmaya Galismayınıt.)

$$C_{+} = -3 + 2i$$

$$S_{h} = e^{-3x} \left[C_{1} \cos 2x + C_{2} \sin 2x \right]$$

$$S_{p} = X e^{-3x} \left[(Ax + B) \sin 2x + (Cx + D) \cos 2x \right] + e^{-2x} \left[(Ex^{2} + Fx + G) \sin 3x + (Hx^{2} + Ix + J) \cos 3x \right]$$

$$-3 + 2i \quad kohinder \quad dolayi$$

$$\frac{6}{9} \frac{y'' - 2y' - 3y = 2e^{x} - 10shx}{-10shx}$$

$$\frac{6}{9} \frac{y'' + 2y' + 5y = 6shx + 76sx}{-10shx}$$