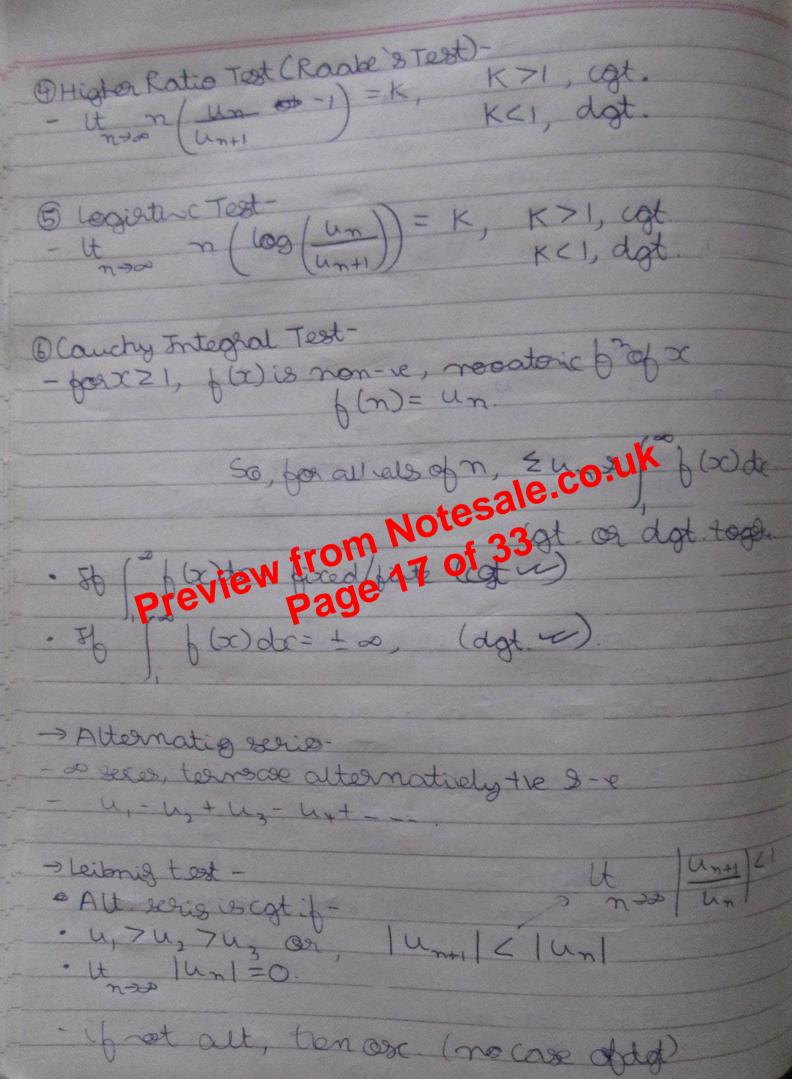


Homogeneous Linear Diff eq "- (reduced to linear)

Location diff eq "

Location diff e Illy, x2d2y = to D(D-Dy Preview from Page 6 of 33

Preview page 6 of 33 Differential Operator-we know that, (D"+9, D" + a, D"-2 + ---+ am) y = x - ib (D). y = X Differential operator So, Completery Fuct ((F)) 6(D). y=0 So, Auxilliay (g "is (b(m)=0=) m +a, m +-+an=0)



· Absolute cot . Elun = lu, 1+lu, 1+lu, 1+lu, 1+ is cost. Sebonits also u conditionally cgt , leibnits v but . Elun = |u, 1+|u, 1 - > cgt Successive Differentiation Dy=e°, y"= a" ear 8 y = (ax+b) m, y = (ax+b) m- x m! xa") fm=n, y"= m! a", The ment of the Notes ale. co.uk

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The page 18 of 33 3 3/m=-1 y = (ox+b) = 1 $y^{m} = a^{m} x(-1)^{m} x^{m} n!$ $(ax+b)^{m+1}$ $0 = \log(\alpha x + b) = y_1 = \alpha$ $y^{m} = \sum_{n=0}^{\infty} x(-1)^{m-1} \times (m-1)!$

confinition 3hd sep. of B A= 5 sin 0 cos 0 do = [P+1 /9+1) Reduction Formula · connects an Integral, withother of same type integral, but of lower order. I. In = \sin^xdx = \sin^{(n-1)}x sinx dx = $\frac{1}{2}$ $\frac{$ $\frac{1}{n} = -\frac{1}{n} \sin \left(\frac{m-1}{n} \right) \times \cos x + \left(\frac{m-1}{n} \right) = \frac{1}{n-2}$ $\int_0^{\pi/2} \sin x dx \Rightarrow \frac{\pi}{2} [I_n] = (n-1) [I_{m-2}]_0^{\pi/2}$ $A = \int_{0}^{\pi} \sin^{2} x \, dx = \int_{0}^{\pi} \frac{1}{(n-1)(n-3)} = \frac{3.1}{2} \times \frac{11}{2}$ (n-1)(n-3)--4.2 × 1 n(n-2) -- 3.1