Nama : Aditya Erlangga Wibowo : 03041282025055 NIM : A Indialaya Kelas 1. Apakan cirrem dinamik berikut bersifat causal, time invariant dan latau zero state Linear? (beri alasan) 1 AL $Y(t) = \int_{0}^{t+2} t^{2} U(\tau) d\tau$ bestifat non-causal, Karena belgantung pada waktu mendatang (++2' + Time invariant or Time Variying? * Actual Ourpur (t) dt t-to+2 (t-to)2U(T-to) dT 10. 17 50 (t-to)2 U (T-to) dT (t-to)2U(d)dd * Derired Ourput e-to+2 +-to (+-to)2U(T)dT y(t) -to) = Actual Ourput & Defined Ourput => Time Variying 2. Cari Transformati Laplace unruk fungi berikut (asumi f(t) = 0) untuk t20 a. F(t) = t2 e-at for t≥0 Penyelesaian: e-st +2 e-at dt F(t) = t2 e ar = t2 e-st-at at -> U = t2, Qu = 2t dx $dV = e^{-(s+a)t}$ V = e = :(sta) t - (sta) vdu udv = vvt2. e-csta)t p - (sta) t 2t dt - (sta) -(s+a) 2+ · e - (5+a)+ U = 2+ , du = 2 dt -t2e-(sta)t dt V = e-(sta) + dut = e - (sta)+ sta Sta -(sta)2 sta

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