[1]Find **y`** :

(a) $y = x^{-4} - \cosh 2x$ (b) $y = 3^x + \sinh x^2$ (c) $y = \ln x . \sin^{-1} x$

(d) $y = \sinh^{-1} x . \log x$ (e) $y = x\, e^y + \sinh x$ (f) $y = t \ln t , \ x = t + \tan^{-1} t$

[2]Find the integrals:

(a) $\int (x^3 + 3^x) dx$ (b) $\int (x^{-2} + \frac{2}{x+3}) dx$ (c)$\int (\cos 2x + \cos^2 x)\, dx$

(d)$\int \frac{x+2}{x^2-5x+4} dx$ (e) $\int \ln x\, dx$