MT1612: EXAMPLE SHEET[1] IV (for March 10, 1999)

1.) Find the general solutions of the following differential equations

(i) $y'' - y' - 12y = 0$,

(ii) $\ddot{x} + 16x = 0$,

(iii) $y'' - 6y' + 13y = 0$,

(iv) $\ddot{x} - 4\dot{x} + 4x = 0$.

2.) Find the solutions of the following differential equations that satisfy the given initial conditions:

(i) $y'' - 5y' + 6y = 0$ with $y = 0$ and $y' = 2$ at $x = 0$,

(ii) $\ddot{x} + 16x = 0$ with $x = 3$ and $\dot{x} = 0$ when $t = 0$,

(iii) $y'' + 2y' + 5y = 0$ with $y = 2$ and $y' = 4$ at $x = 0$.

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