



Differential Equations Assignment 20

Find the following.

(a) $\mathcal{L} \{te^{5t}\}$

(b) $\mathcal{L} \{(1 - e^t + 2e^{-3t}) \cos(6t)\}$

(c) $\mathcal{L}^{-1} \left\{ \frac{1}{s^2 - 4s + 5} \right\}$

(d) $\mathcal{L}^{-1} \left\{ \frac{s}{s^2 + 4s + 5} \right\}$



Solutions to Assignment 20

(a) $\frac{1}{(s-5)^5}$

(b) $\frac{s}{s^2+36} - \frac{s-1}{(s-1)^2+36} + \frac{2(s+3)}{(s+3)^2+36}$

(c) $e^{2t} \sin(t)$

(d) $e^{-2t} \cos(t) - 2e^{-2t} \sin(t)$