2E2 Tutorial Sheet 3 First Term[1]

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1. (2) Using the Laplace transform solve the differential equation

$$f'' + f' - 6f = e^{-3t} \tag{1}$$

with boundary conditions $f(0) = f'(0) = 0$.

2. (3) Using the Laplace transform solve the differential equation

$$f'' + 6f' + 13f = 0 \tag{2}$$

with boundary conditions $f(0) = 0$ and $f'(0) = 1$.

3. (3) Using the Laplace transform solve the differential equation

$$f'' + 6f' + 13f = e^{t} \tag{3}$$

with boundary conditions $f(0) = 0$ and $f'(0) = 0$.

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