

Math 421 / Quiz 1

Name:

1. Use the definition of the Laplace transform to find $\mathcal{L}\{f(t)\}$ for

$$f(t) = \begin{cases} t & , \text{if } 0 \leq t < 1 \\ 1 & , \text{if } t \geq 1 \end{cases}$$

2. Use the linearity of the Laplace transform to calculate $\mathcal{L}\{f(t)\}$ when $f(t) = (1 + e^{2t})^2$

Recall that

$$\mathcal{L}\{e^{at}\} = \frac{1}{s - a}$$