

# Assignment 1

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Download latex codes from

<https://github.com/96143/Assignment-1/blob/main/assignment%201%20question%206.1.2>

## 1 PROBLEM

(6.1.2) If

$$F_v(x) = \begin{cases} 1 - e^{-ax} & x \geq 0 \\ 0 & x < 0 \end{cases}$$

find a

## 2 SOLUTION

$$F_v(x) = \begin{cases} 1 - e^{-ax} & x \geq 0 \\ 0 & x < 0 \end{cases}$$

$$\text{We get: } F_v(x) = \begin{cases} e^{-ax} & x \geq 0 \\ 0 & x < 0 \end{cases}$$

$$\int_0^{\infty} e^{-ax} = 1$$

$$\left( \frac{e^{-ax}}{-a} \right)_0^{\infty} = 1$$

$$0 + \frac{1}{a} = 1$$

$$a = 1$$