
Obtain:

$$\int e^x \cos(x) \qquad \frac{e^x}{2}\sin(x) + \frac{e^x}{2}\cos(x)$$

Obtain:

$$\lim_{x \to 1} \frac{x^4 - 1}{x^2 - 1} \qquad 2$$

What is the expected number of customers in the system for an $M/M/1$ queue with arrival rate 1 and service rate 2 (at steady state)?

$$\frac{\frac{1}{2}}{1 - \frac{1}{2}} = 1$$

Minimize: $4x + 12y$
subject to:

$$\begin{aligned} x &\geq 0 \\ y &\geq 0 \\ 5x - y &\geq 2 \\ x + 2y &\leq 1 \end{aligned}$$

$$(x, y) = \left(\frac{5}{11}, \frac{3}{11}\right)$$

Obtain the mixed Nash equilibria for the following game:

$$\begin{pmatrix} 5, 6 & 1, 0 \\ 0, 1 & 6, 5 \end{pmatrix}$$

$$\left(\left(\frac{2}{5}, \frac{3}{5}\right), \left(\frac{1}{2}, \frac{1}{2}\right)\right)$$