Lab 10

$$\Gamma(a) = \int_0^\infty x^{a-1} e^{-x} dx; \quad a>0$$

$$X \sim Exp(\lambda) \qquad f(x) = \begin{cases} \lambda \cdot e^{-\lambda x}; & x>0 \\ 0, \text{ in rest} \end{cases}$$

$$E(X) = \int_{-\infty}^{\infty} x f(x) = \int_{-\infty}^{0} x \, dx + \int_0^\infty x \lambda e^{-\lambda x} dx$$

$$B(a,b) = \int_0^1 x^{a-1}(1-x)^{b-1} dx$$

$$B(a,b) = \frac{\Gamma(a) \cdot \Gamma(b)}{\Gamma(a+b}$$