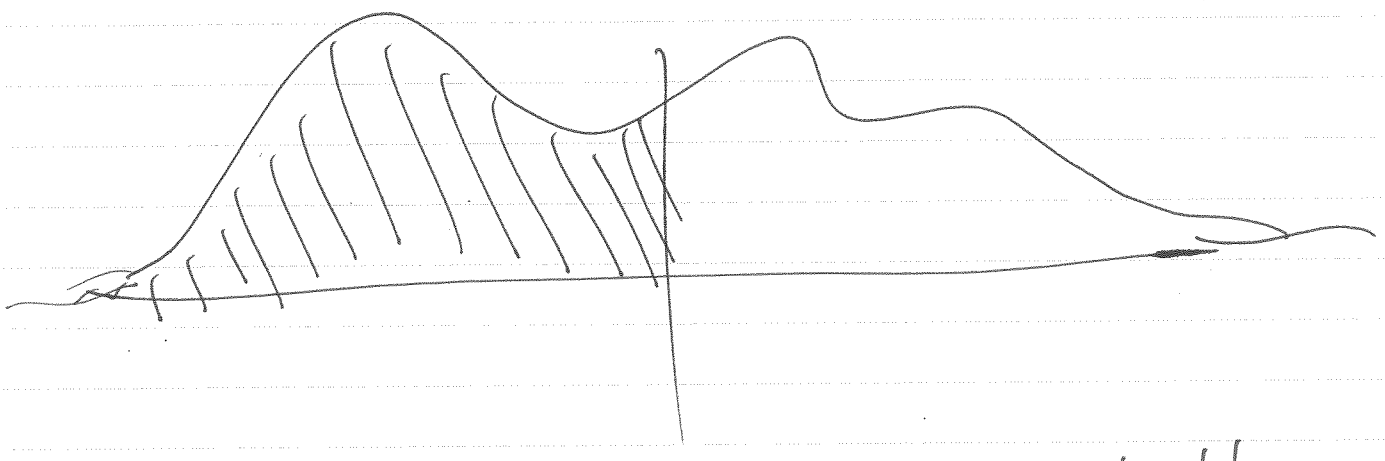
1800 seconds.

$$T = X_1 + \cdots + X_{1800} \sim B\left(1800, \frac{5}{1800}\right)$$

Then $E(T) = 5$

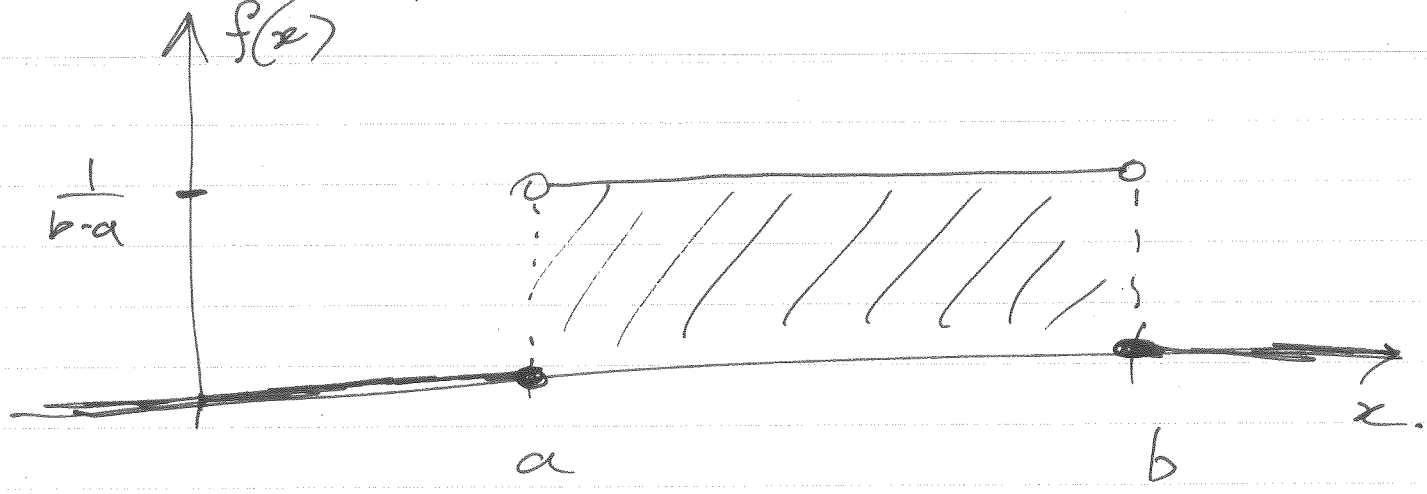
$$\left(1 + \frac{x}{n}\right)^n \longrightarrow e^x$$

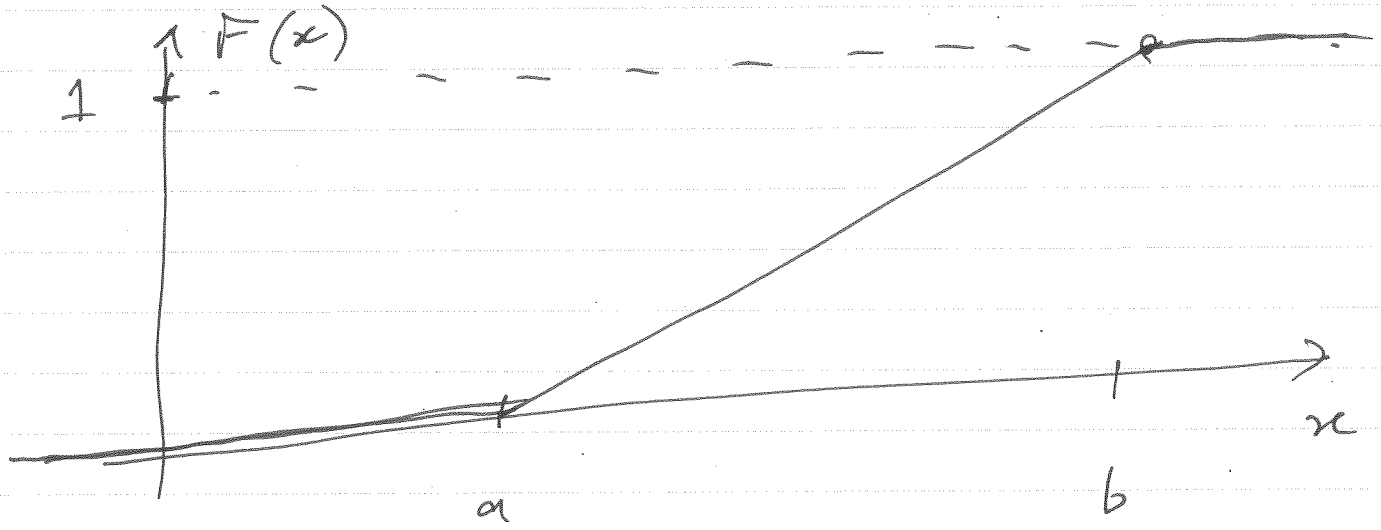
$$e^\lambda = 1 + \lambda + \frac{\lambda^2}{2!} + \frac{\lambda^3}{3!} + \cdots$$



$a < b$!!

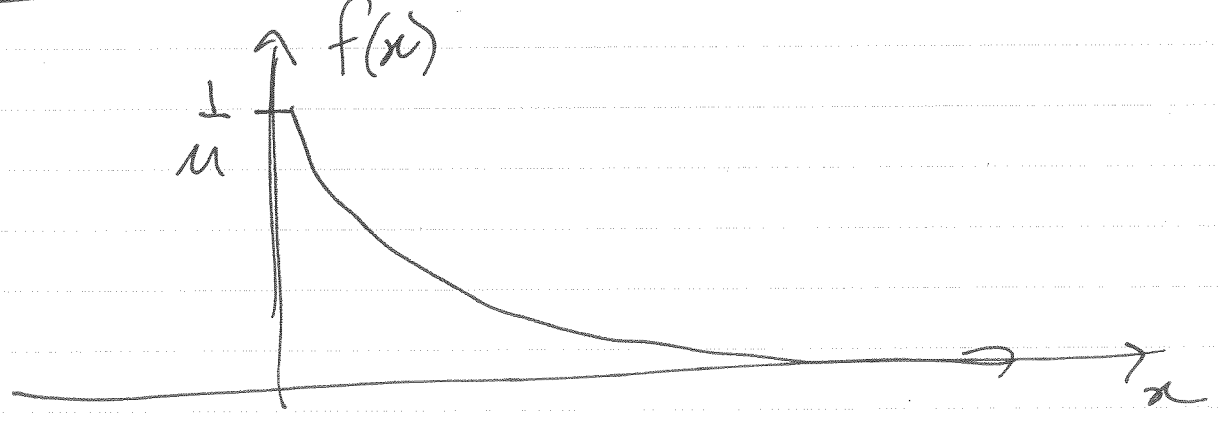
← Prob Dens Function

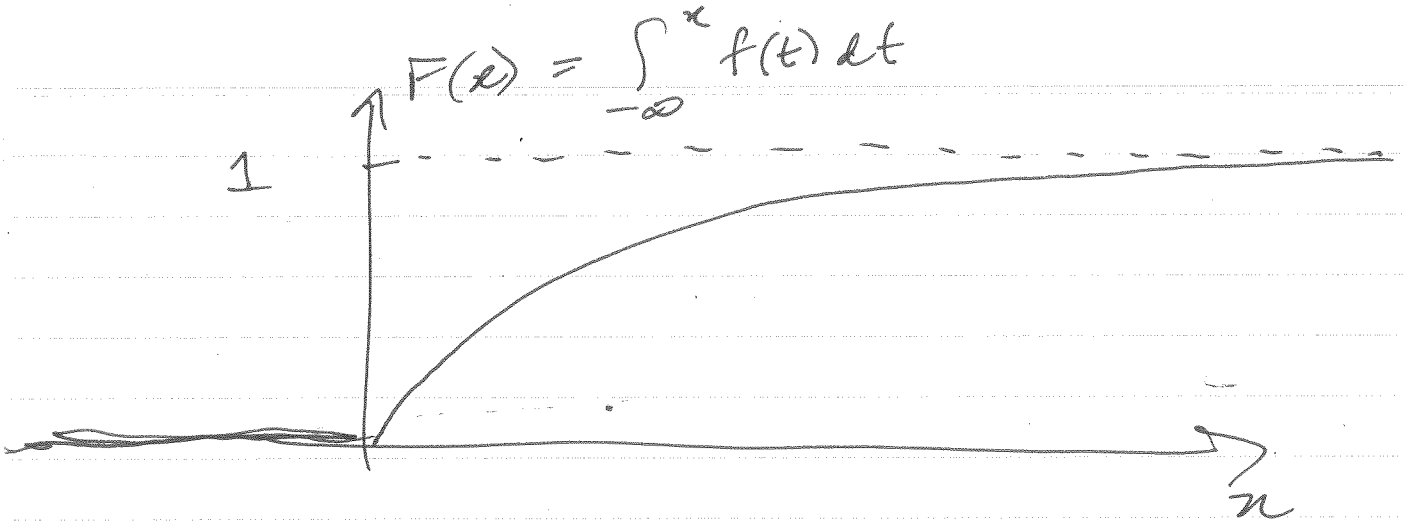


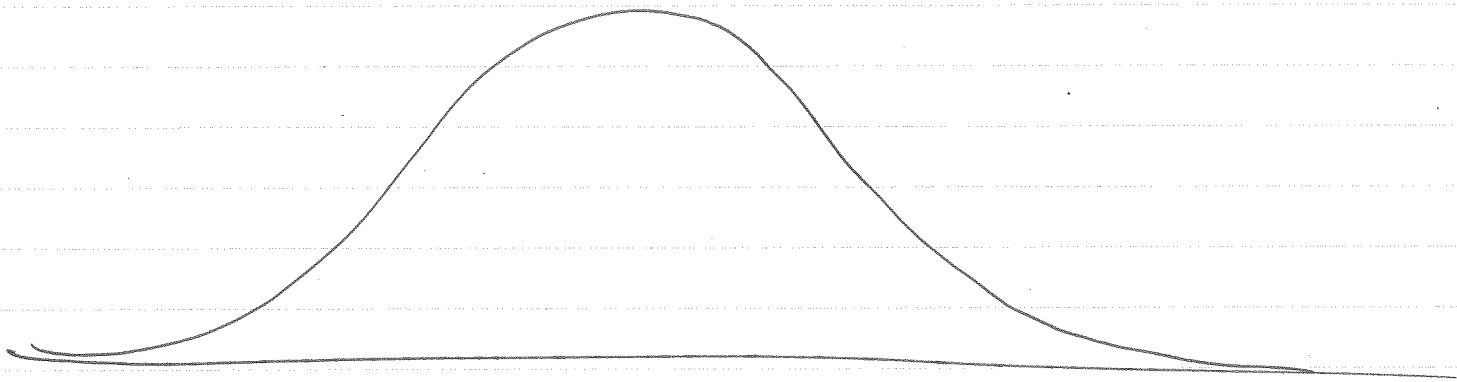


$$F(x) = \int_{-\infty}^{x} f(t)\,dt \cdot$$

$$f(x) = \frac{d}{dx} F(x)$$







$$\left[\int e^{-\frac{1}{2}x^2}dx\right]^2 = \int e^{-\frac{1}{2}x^2}dx \int e^{-\frac{1}{2}y^2}dy$$

$$= \iint e^{-\frac{1}{2}x^2+\frac{1}{2}y^2}\,dx\,dy$$

$$= \iint e^{-\frac{1}{2}(x^2+y^2)}\,dx\,dy$$