

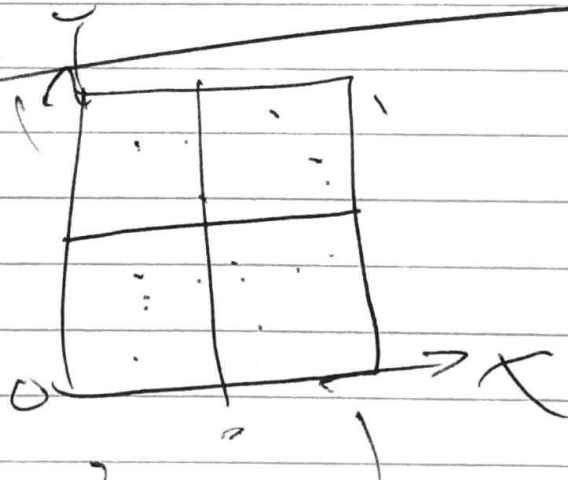
4/1/19 - 1

$$f(x) = \frac{1}{\sqrt{2\pi}} e^{-\frac{x^2}{2}}$$

$$\int_{-\infty}^{\infty} f(x) dx = 1 \quad \int_{-\infty}^{\infty} \frac{1}{\sqrt{2\pi}} e^{-\frac{x^2}{2}} dx = 1$$

$$\int_{-\infty}^{\infty} e^{-\frac{x^2}{2}} dx = \sqrt{2\pi}$$

$$f(x) = 1$$
$$f_Y(y) = 1$$



$$f_{X,Y}(x,y) = f_X(x) f_Y(y) = 1 \quad \text{PDF} = 1 \text{ AND } = 1$$

$$F_{X,Y}(x,y) = F_X(x) F_Y(y) \quad \text{CDF} =$$

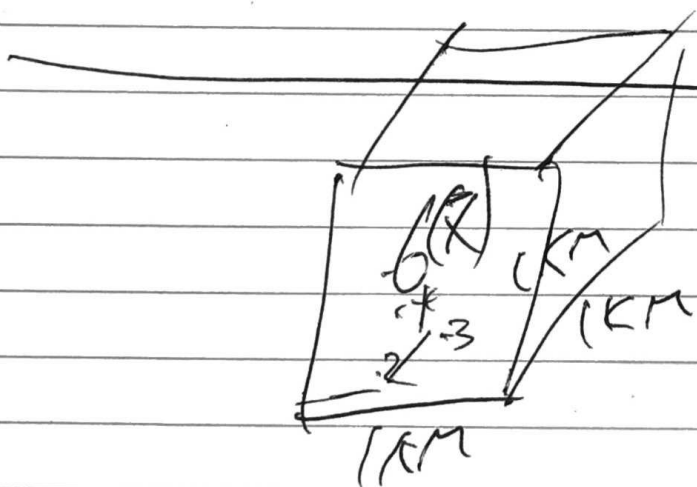
MW OF 3 EXPON R.V.

$$\lambda_1 = 1$$

$$\lambda_2 = 2 \quad 2 \text{ HITS / MIN. } \stackrel{\text{dist}}{\sim} \frac{1}{2} \text{ MIN TO NEXT}$$

$$\lambda_3 = 3$$

$$\lambda_{\text{MUT}} = 6 \quad \frac{1}{6} \text{ MIN TO NEXT HIT.}$$



$$f(x) = 1$$

$$\int_0^2 \int_0^3 \int_0^4 f(x) = 1$$

USE M NOT KM  $Z = 1000 X$

$$(2, 3, 4) \rightarrow (200, 300, 400)$$

$$f_3(z) = \frac{1}{1000^3} f\left(\frac{z}{1000}\right)$$

$$\int_0^{200} \int_0^{300} \int_0^{400} f_3(z) = \frac{1}{1000^3} \int_0^{200} \int_0^{300} \int_0^{400} 1 = 1$$