a) $(X,Y) \sim N_2(0,0,1,1,\rho)$

$X \sim N(0,1) \longrightarrow x_0$

$Y|X=x \sim N(\rho x, 1-\rho^2) \rightarrow y_0$

(x_0, y_0) is a sample from bivariate normal distribution.

b) $(X,Y) \sim MN(n, p_1, p_2)$

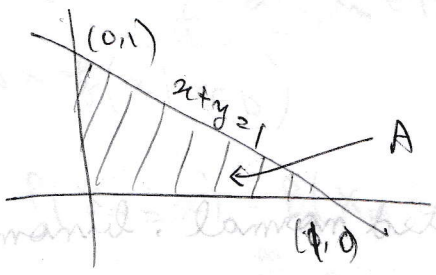
$X \sim Bin(n, p_1) \rightarrow x_0$

$Y|X=x \sim Bin\left(n-x, \dfrac{p_2}{1-p_1-p_2} < 1\right) \rightarrow y_0$

(x_0, y_0) is a sample from multinomial distribution.

c) $(X,Y) \sim$ Uniform over A where

$A = \{(x,y) : 0 \le x \le 1, 0 \le y \le 1, x+y \le 1\}$



$f(x,y) = 2; \quad 0 \le x \le 1, \quad 0 \le y \le 1, \quad x+y \le 1$
$= 0, \quad$ o.w.

(∵ Area of $A = \frac{1}{2}$ ⇒ Joint pdf $= \frac{1}{\text{Area}}$)