$$\theta = 2\pi x_1 \tag{1}$$

$$r = \sqrt{-2\sigma^2 \ln(1 - x_2)} \tag{2}$$

$$X_1 = r\sin(\theta) \tag{3}$$

$$X_2 = r\cos(\theta) \tag{4}$$

$$\sigma^2_{guassian} = \frac{\sigma^2}{N} \tag{5}$$