

# MATH 254 – Test 3 Cheat Sheet

$$Z = \frac{X - \mu}{\sigma}$$

$$\mu_X = \sum x_i p_i$$

$$\mu_{a+bX} = a + b\mu_X$$

$$\mu_{X+Y} = \mu_X + \mu_Y$$

$$\sigma_X^2 = \sum (x_i - \mu_X)^2 p_i$$

$$\sigma_{a+bX}^2 = b^2 \sigma_X^2$$

$$\sigma_{X+Y}^2 = \sigma_X^2 + \sigma_Y^2 + 2\rho\sigma_X\sigma_Y$$

$$\sigma_{X-Y}^2 = \sigma_X^2 + \sigma_Y^2 - 2\rho\sigma_X\sigma_Y$$

$$P(B|A) = \frac{P(A \text{ and } B)}{P(A)}$$