

Ex. 1000 flips of a fair coin.

$X = \# \text{ of heads}$

$$P(200 \leq X \leq 800)$$

$$Y \sim N(E[X], \text{Var}(X)) = N(500, 250)$$

$$P(200 \leq X \leq 800) = P(199.5 \leq X \leq 800.5)$$

$$\approx P(199.5 \leq Y \leq 800.5)$$

