

Quiz 4 #7

$$V(\bar{Y}) = V \left[\sum_{i=1}^n \frac{1}{n} Y_i \right]$$

$$= \frac{1}{n^2} V \left[\sum_{i=1}^n Y_i \right]$$

$$= \frac{1}{n^2} \sum_{i=1}^n V(Y_i)$$

$$= \frac{1}{n^2} \sum_{i=1}^n \sigma^2$$

$$= \frac{1}{n^2} n \sigma^2 = \frac{\sigma^2}{n} //$$