

Suppose we sample WITH repl.

$$N = 15, \quad M = 10, \quad n = 7, \quad x = 3$$

1. choose subset size 3 from $\{1, 2, \dots, 7\}$
 $\Rightarrow \{2, 4, 5\}$.

2. pick ordered sample size 3 from $\{1, 2, \dots, 10\}$
 $\Rightarrow (9, 4, 4)$

3. pick ordered sample size 4 from $\{11, 12, \dots, 15\}$
 $\Rightarrow (12, 12, 11, 14)$

12 9 12 4 4 11 14

$$\begin{aligned}\text{Var}(X) &= E\left\{[X - E(X)]^2\right\} \\ &= E[(X - \mu)^2] \quad \text{where } \mu = E(X)\end{aligned}$$

