

seed

$$n = 8$$

$$P = 0.75$$

$$1-P = 0.25$$

$$X \sim \text{Bin}(8, 0.75)$$

$$P(6) = \binom{8}{6} (0.75)^6 (0.25)^2$$

$$b(x; n, P) \\ n \binom{x}{x} * P^x * (1-P)^{n-x}$$

N = trials

R = Successes
r = Successes

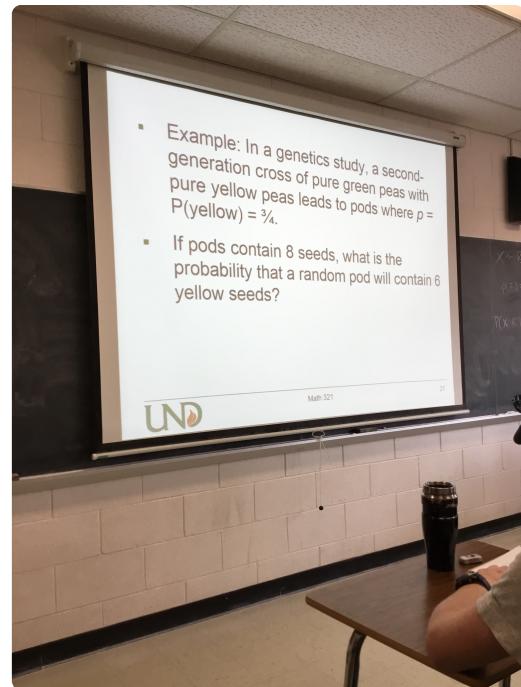
$$P = P(\text{success}) = \text{Prob of success} \\ = 0.3115$$

at least 6 yellow

$$P(X \geq 6) = P(6) + P(7) + P(8)$$

$$0.3115 + \binom{8}{7} (0.75)^7 (0.25)^1 +$$

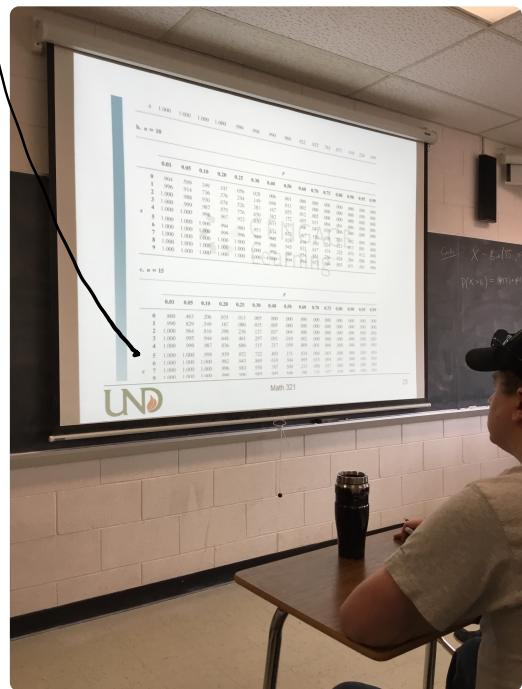
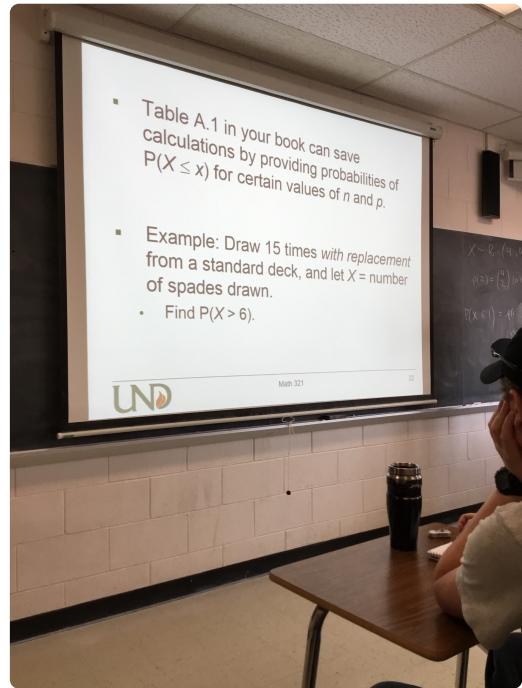
$$(0.75)^8 = 0.6786$$



$$\begin{aligned}
 & P(X > 6) = \left(\frac{1}{4}\right)^{15} \\
 & = P(X \geq 6) = 0.943 \\
 & = 1 - 0.943 \\
 & = P(X > b)
 \end{aligned}$$

15 trials
 $X \sim \text{Bin}(15, 1/4)$
 $P(X > 6) = P(7) + P(8) + \dots$
 $P(14) + P(15)$

Binomials
DST.
Table
& cumulative

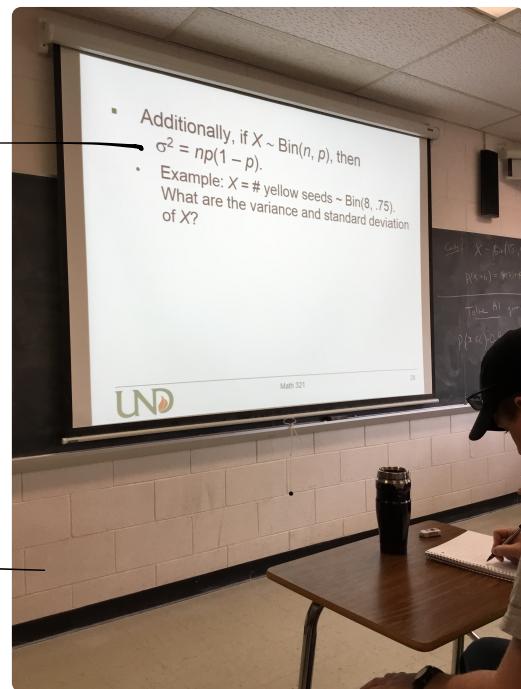


1st column
 $P(1) = P(0) + P(1)$
or $P(2)$

$$8(0.75)(0.25) \\ = 1.5$$

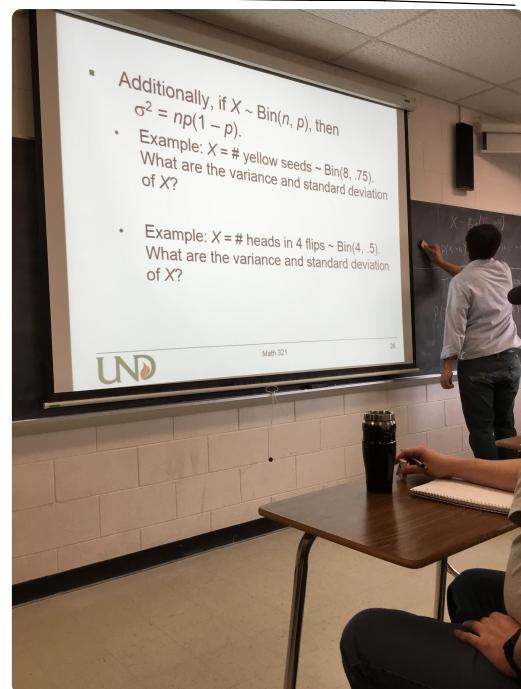
standard dev -

$$\sqrt{1.5} \\ = 1.2247$$



$$x \sim \text{Bin}(4, 0.5) \\ \sigma(x) = \sqrt{4(0.5)(0.5)} \\ = 1$$

$$\text{Sigma} = 1 \\ (\sqrt{?})?$$



Independence

vs.

Dependence

$$(0.93)^8 - \text{no defects}$$

$$(1 - \uparrow) - n$$

