

$$\boxed{10E} \quad X \sim B(8, 0.4)$$

(\uparrow, \uparrow)
 (n, p)

$$P(X=5) = \binom{8}{5} (0.4)^5 (0.6)^3 = 0.124$$

or binomial pdf (8, 0.4, 5)

$$(b) \quad P(X \leq 5) = \text{binomialcdf}(8, 0.4, 5) \\ = 0.950$$

$$(c) \quad P(X < 5) = P(X \leq 4) = 0.826$$

$$(d) \quad E(X) = 8 \cdot (0.4) = 3.2$$

$$(e) \quad \sigma^2 = 8(0.4)(0.6) = 1.92$$

$$(f) \quad \underbrace{P(X \geq 3) = 1 - P(X \leq 2)} = 0.685$$

④ $X =$ number of rainy days
in June

$$X \sim B(30, 0.02)$$

(a) $P(X=3) = 0.0188$
binomial pdf $(30, 0.02, 3)$

(b) $(0.98)^5 = 0.904$

(c) $E(X) = 30(0.02) = 0.6$

8 $X =$ days Mr Li watches TV news
in a week

$$X \sim B(5, 0.3)$$

(a) (i) $P(X=4) = 0.0284$

(ii) $P(X \geq 3) = 1 - P(X \leq 2) = 0.163$

(b) $3(0.3)^3(0.7)^2 = 0.0397$

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4 (again)

$P(2 \text{ rainy days in the 1st } 5$
 $\text{days of June})$

$$\binom{5}{2} (0.02)^2 (0.98)^3 = 0.00376$$

HW quiz 11-8-18

The probability that Jim makes an A on a HW quiz is 0.4.

- (a) Find the probability that he makes an A on 3 of the next 5 quizzes.
- (b) Find the prob. that he makes an A on at least 2 of the next 5 quizzes.

10G $X = \text{acc/week}$

$$X \sim P_0(0.7)$$

$$(a) P(X=2) = \frac{e^{-0.7} 0.7^2}{2!} = \frac{0.245}{e^{0.7}}$$

$$\text{poisson pdf}(0.7, 2) = 0.122$$

$$(b) P(X \geq 2) = 1 - P(X \leq 1)$$

$$= 1 - \text{poissoncdf}(0.7, 1)$$

$$= 0.156$$

(2) $X = \text{bacteria in a ml}$

$$X \sim P_0(3)$$

$$(a) P(X \geq 4) = 1 - P(X \leq 3) = 0.353$$

$$(b) P(X \leq 2) = 0.423$$

$$\textcircled{3} P(X=1) = 0.1$$

$$\frac{e^{-m} m}{1!} = 0.1$$

10 H #2 $X =$ number of flaws
in 100 m^2 of cloth

$$(a) X \sim P_0(1)$$

$$\textcircled{\otimes} P(X=2) = \frac{e^{-1} 1^2}{2!} = \frac{1}{2e}$$
$$= 0.184$$

(b) $Y =$ number of flaws in 25 m^2

$$Y \sim P_0(0.25)$$

$$P(Y \geq 1) = 1 - P(X=0)$$
$$= 1 - 0.7788$$
$$= 0.221$$

HW

10 D # 2, 3, 8

10 ~~H~~ # 1, 3, 7

11/12 Mon :

11/14 Wed :

11/16 Fri : TEST