

15.

a. (1,2) (1,3) (1,4) (1,5) (2,3) (2,4) (2,5) (3,4) (3,5) (4,5)

b. $P(X=0) = p(0) = P[\{(3,4) (3,5) (4,5)\}] = \frac{3}{10} = .3$

$$P(X=2) = p(2) = P[\{(1,2)\}] = \frac{1}{10} = .1$$

$$P(X=1) = p(1) = 1 - [p(0) + p(2)] = .60, \text{ and } p(x) = 0 \text{ if } x \neq 0, 1, 2$$

c. $F(0) = P(X \leq 0) = P(X=0) = .30$

$$F(1) = P(X \leq 1) = P(X=0 \text{ or } 1) = .90$$

$$F(2) = P(X \leq 2) = 1$$

The c.d.f. is

$$F(x) = \begin{cases} 0 & x < 0 \\ .30 & 0 \leq x < 1 \\ .90 & 1 \leq x < 2 \\ 1 & 2 \leq x \end{cases}$$