What is the chance that she attends at least 2 days? What is the chance she attends class 2 or 3 days in the week?

$$P(attends\ at\ least\ 2\ days) = P(X \geq 2) = P(X = 2) + P(X = 3) = 0.8 + 0.15 = 0.95$$

(can use complement rule to find same answer)

$$P(X \geq 2) = 1 - P(X < 2) = 1 - [P(X = 1) + P(X = 0)] = 1 - (0.01 + 0.04) = 1 - 0.05 = 0.95$$

X	0	1	2	3
P(X)	0.01	0.04	0.15	0.8

On average, how many days will Nancy attend classes? Calculate the expected value of X (E(X)), variance, and standard deviation

$$EX = \sum x * p(x) = 0(0.01) + 1(0.04) + 2(0.15) + 3(0.8) = 2.74\ days\ attended\ per\ week$$

$$V(X) = \sum(x - EX)^2 p(x) = (0 - 2.74)^2(0.01) + (1 - 2.74)^2(0.04) + (2 - 2.74)^2(0.15) + (3 - 2.74)^2(0.8) = 0.33$$

$$\binom{7}{2} = \frac{7!}{2!\,(7 - 2)!} = \frac{7!}{2!\,5!} = \frac{7 * 6 * 5 * 4 * 3 * 2 * 1}{(2 * 1)(5 * 4 * 3 * 2 * 1)} = \frac{7 * 6}{2 * 1} = 21$$