

The probability for a policeman to fire a gun during a career in a certain city is tabulated:

X: # times fired a gun	P(X): probability	$X \cdot P(X)$	$X^2 \cdot P(X)$
0	.65		
1	.24		
2	.10		
3	.01		

1) Graph the probability distribution

2) Find the mean: $\mu = \Sigma (X \cdot P(X))$

3) Find the variance: $\sigma^2 = \Sigma [X^2 \cdot P(X)] - \mu^2$

4) Find the standard deviation: $\sigma = \sqrt{\sigma^2}$

5) Find the expected return for the following scratch game:

To Win:	Approx. Odds*
\$1	1 in 8.11
\$2	1 in 12.5
\$3	1 in 60
\$6	1 in 150
\$7	1 in 150
\$9	1 in 300
\$14	1 in 300
\$18	1 in 300
\$25	1 in 800
\$50	1 in 1,600
\$75	1 in 6,000
\$250	1 in 60,000
\$2,500	1 in 240,000



6) What is the probability that a baseball player batting .200 will get 2 out of 4 hits?

7) What is the probability that a baseball player batting .300 will get at least one hit in four at-bats?

8) If 20% of refrigerators are defective, what is the probability that 3 refrigerator out of 20 will be defective?

9) It is known that 55% of voters like using vehicle registration taxes for roads. If 100 voters are selected, what is the mean and standard deviation for the number of voters who like using vehicle registration for roads?

$$q = 1 - p =$$

$$\mu = np =$$

$$\sigma = \sqrt{npq} =$$

10) A basketball player has a 70% free-throw average. What is the probability that this player will make at least 3 out of 6 free throws during a game? (Compute the probability for making 3, 4, 5, and 6 free throws, then add these up.)