

The probability that a taxi driver gets a traffic ticket in a certain city is tabulated:

X: # Traffic Tickets	P(X): probability	$X \cdot P(X)$	$X^2 \cdot P(X)$
0	.37		
1	.45		
2	.15		
3	.03		

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:	Odds*	# of Prizes**
\$3	1 in 7.27	369,093
\$5	1 in 14.28	187,933
\$10	1 in 28.57	93,951
\$15	1 in 50	53,688
\$30	1 in 149.98	17,898
\$50	1 in 435.36	6,166
\$100	1 in 532.83	5,038
\$1,000	1 in 95,871.43	28
\$30,000	1 in 536,880	5

*The overall ticket odds of winning are 1 in 3.66.

**The number of actual winners may vary based on sales, distribution and number of prizes claimed.

6) What is the probability that a baseball player batting .300 will get 3 out of 4 hits?

7) What is the probability that a baseball player batting .400 will get at least 1 hit in four at-bats?

8) If 90% of microwave ovens are perfect, what is the probability that 8 out of 10 microwave ovens will be perfect?

9) It is known that 58% of voters like Bill A. Shifty. If a sample of 250 voters are randomly selected, what is the mean and standard deviation for the number of voters in the sample who like Bill A. Shifty?

$$q = 1 - p =$$

$$\mu = np =$$

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

10) A basketball player has a 90% free-throw average. What is the probability that this player will make at least 7 out of 9 free throws during a game? (Compute the probability for making 7, 8, and 9 free throws, then add these up.)