

## Binomial, Geometric, and Poisson Distributions

1. Basketball player Ron Artest makes free throws 62% of the time. Find the probability that he missed his first two shots but makes his third shot?
2. Basketball player Chris Paul makes free throws 91% of the time. Find the probability that he missed his first shot but makes his second shot?
3. Basketball player Eric Gordon makes free throws 81% of the time. Find the probability that he missed his first shot but makes his second shot?
4. A local police station receives an average of .33 rescue calls per day. Use the Poisson distribution to find the probability that on a randomly selected day the fire station will receive fewer than 2 calls.
5. A local police station receives an average of 1.24 rescue calls per day. Use the Poisson distribution to find the probability that on a randomly selected day the fire station will receive fewer than 3 calls.
6. A car towing Service Company averages 3 calls per hour. Use the Poisson distribution to determine that probability that in a randomly selected hour the number of calls is 6.
7. A book contains 400 pages. If there are 80 typing errors randomly distributed throughout the book, use the Poisson distribution to determine the probability that a page contains exactly 2 errors.
8. According to government data the probability that a woman between the ages of 25 and 29 was never married is 25%. In a random survey of 6 women what is the probability that at least 4 were married?
9. According to police sources, a car with a certain protection system will be recovered is 60% of the time. Find the probability that 4 out of 5 cars stolen will be recovered.

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10. A sales firm receives an average of 6 calls per hour on its toll-free number. For any given hour find the probability that it will receive at least 5 calls using the Poisson distribution.
  
11. A mail order company receives an average of 12 orders per 300 ads. If it sends out 100 ads, find the probability of receiving at most 4 orders. Use the Poisson distribution.
  
12. A mail order company receives an average of 15 orders per 500 ads. If it sends out 100 ads, find the probability of receiving at most 2 orders. Use the Poisson distribution.

**State which of the following is a Binomial, Geometric or Poisson distribution (DO NOT SOLVE)**

13. Given the probability that a federal income taxes filled out incorrectly with an error in favor of the taxpayer is 10%. Questions what is the probability that of the ten tax returns randomly selected from a given month, that four returns will contain only errors favoring the taxpayers?
  
14. Given the probability that a federal income taxes filled out incorrectly with an error in favor of the taxpayer is 10%. Questions what is the probability that of the ten tax returns randomly selected, that the eighth return be the first one to contain only errors favoring the taxpayers?