

Statistics Exercises

Probability density functions

1. If $p(x) = x/2$ for x ranging from 0 to 2, and $p(x) = 0$ otherwise, what is the mean of this density?
2. If $p(x) = 2x/9$ for $0 < x < 3$, and $p(x) = 0$ otherwise, what is $P(0 < x < 1)$?
3. What is the variance of a uniform variable with range a to b ?
4. If scores are normally distributed with a mean of 35 and a standard deviation of 10, what percent of the scores is:
 - (a) greater than 34?
 - (b) smaller than 42?
 - (c) between 28 and 34?
5. The life of Sunshine DVD players is normally distributed with a mean of 4.1 years and a standard deviation of 1.3 years. A DVD player is sold with a warranty of 3 years. We are interested in the lifetime of a DVD player.
 - (a) Find the probability that a DVD player will break down during the warranty period.
 - (b) Find the probability that a DVD player has a lifetime between 2.8 and 6 years.
 - (c) Find the 70th percentile of the distribution for the lifetime of a DVD player.