1. Write the claim mathematically and identify H0 and Ha. (b) find the critical value(s) and identify the rejection region. (c) Find the standardized test statistic. (d) determine whether to reject the null hypothesis. In a sample of 1741 home buyers, you find that 804 home buyers found their real estate agent through a friend. At a=0.02, Can you reject the claim that 42% of home buyers found their real estate agent through a friend.
2. A film developer claims that the mean number of pictures developed for a camera with 24 exposures is more than 23. If a hypothesis test is performed, how should you interpret a decision that (a) rejects the null hypothesis and (b) fail to reject the null hypothesis.
3. Find the mean, variance, and standard deviation of the binominal distribution with the given values of n and p. n=128 p=0.89
4. As part of your work for an environmental awareness group, you want to test the claim that the mean waste generated by adults in the country is more than 3.5 pounds per person per day. In a random sample of 15 adults in the country, you find that the mean waste generated is 4.2 pounds and the standard deviation is 1.6 pounds. At a=0.10. can you support the claim assuming that the population is normally distributed. (a) write the claim mathematically and identify H0 and Ha. (b) find the critical value(s) and identify the rejection region. (c) Find the standardized test statistic. (d) determine whether to reject the null hypothesis. (e) Interpret the decision in the context of the original claim.
5. A frequency distribution is shown below. Complete parts (a) through (e). The number of overtime hours worked in one week per employee.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Overtime Hours | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| Employees | 5 | 17 | 33 | 36 | 44 | 29 | 16 |

1. Use the frequency distribution to construct a probability distribution

|  |  |
| --- | --- |
| x | P(x) |
| 0 |  |
| 1 |  |
| 2 |  |
| 3 |  |
| 4 |  |
| 5 |  |
| 6 |  |
|  |  |

1. Find the mean of the probability distribution µ=
2. Find the variance of the probability distribution σ2 =
3. Find the standard deviation of the probability distribution σ =
4. Interpret the results in the context of the real-life situation
5. Use the confidence interval to find the margin of error and the sample mean (0.404,0.540)
6. Construct the 95% and 99% confidence interval for the population proportion p using the sample statistics below. Which interval is wider? If convenient, use technology to construct the confidence intervals. p=0.737, q=0.263, n-4.271