Chart

Description automatically generated with medium confidence

1. H0: p = 0.31  
   HA: p != 0.31
2. A good simulation would be to create a simulated where 31% are live births and take out a random 30 participants from the group. Repeat this thousands of times in order to develop a histogram around the null hypothesis. This will help discover the likelihood of the new hypothesis.
3. When looking at the Histogram, there is a high chance where 0.4 could have been achieved even with a population that supports 0.31
4. I Would say it was inappropriate to release this news article considering we don’t have the statistics to throw out the null hypothesis.

Text

Description automatically generated

1. Men~N(4313,583)  
   Woman~N(5261,807)
2. Leo Z = (4948-4313)/583 = 1.09  
   Mary Z = (5513-5261)/807 = 0.31  
   This Means that Leo was Quite slow, being outside of the standard deviation for men  
   Mary Was also slower than the mean, but fell within the standard deviation
3. Mary Ranked better within her group, as she fell within the standard deviation, unlike Leo
4. Leo Finished Faster Than 13.79% of men within his group   
   (Using a Normal Probability Table to get 0.8621) 1 - 0.8621 = 0.1379
5. Mary Finished Faster Than 37.83% of woman within her group  
   (Using a Normal Probability Table to get 0.6217) 1 - 0.6217 = 0.3783
6. If the distribution was not normal, that the z scores would be different because we could not use a normal probability table in order to guess the probability like we did in D & E

A screenshot of a computer

Description automatically generated

1. N(14.7,33)  
   Z =( 0-14.7)/33 = -0.45  
   Plugging -0.45 into a Normal Distribution Table gives you 0.3264  
   32.64% Return Less that 0%
2. Z = 1.04 Would be about the cutoff for highest 15% of returns

Text

Description automatically generated

1. N(72.6, 4.78)  
   Z = (80-72.6)/4.78 = 1.55  
   (Using Normal Distribution Table) 0.9394  
   93.94% are slower than 80mph
2. Z = (60-72.6)/4.78 = -2.64  
   (Using Normal Distribution Table) 0.0041  
   93.94% - 0.41% = 93.53%  
   93.53% drive between 60-80 mph
3. ~95% Using Normal Distribution Table = Z = 1.65  
   1.65\*4.78+27.6 = 80.487  
   The top 5% Drive at 80.487 MPH or faster
4. Z = (70-72.6)/4.78 = -0.54  
   (Using Normal Distribution Table) 0.2946  
   1 – 0.2946 = 0.7054  
   70.54% Of people are speeding

A screenshot of a computer

Description automatically generated with medium confidence

1. H0: P = 20%  
   HA P > 20%
2. It would be more appropriate to do a one sided test, as we already have the results of 24%. We would only do a two-sided test in order to find out if a significant amount of the population does not think crime is an issue. We only care about one direction
3. Z = (20, 1.8)  
   (24-20)/1.8 = 2.22  
   (Using Normal Distribution Table) 0.9868  
   There is only a 1.32% Chance this happened by error.  
   Crime SHOULD receive special attention