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2I-TI / 22 / 2141720157

Kuis 2

Statistic Computation

1. Standard normal distribution

   X = 290

   $\mu = 281.67$

   $\sigma = 323.07$

   Z-Score

   $$Z = \frac{(x - \mu)}{\sigma}$$

   $$Z = \frac{(290 - 281.67)}{323.07}$$

   $$Z = 0.0257839$$

   Cumulative probabilty = 0.5091

   $P = 0.5091^{100}$

   Or approximately equal to **1.033 x 10^{-11}**

2. Confidence interval

   x̄ = 53.56

   n = 25

   $\sigma^2 = 1948.24$

   Standard deviation = $\sqrt{1948.24} \approx 44.15$

   $$\text{Confidence interval} = 53.56 \pm 2.064 \ x \ \frac{44.15}{\sqrt{25}}$$
   $$\text{Standard error} = \frac{44.15}{\sqrt{25}} = 8.83$$
   $$\text{Confidencce Interval} = 53.56 \pm 2.064 \ x \ 8.83$$
   $$= 53.56 \pm 18.20$$
   $$= \textbf{35.36 v 71.76}$$

3. Total Pokemon Who have been caught = 698
   Total Pokemon Who have Fled = 17
   Caught standard deviation = 0
   Fled standard deviation = 0
   Harley testing = Biggest variance / smallest variance
   There are no variance on the dataset because the dataset only consists of each '1' (caught) and '0' (flee) which makes it impossible to prove the Harley test result.
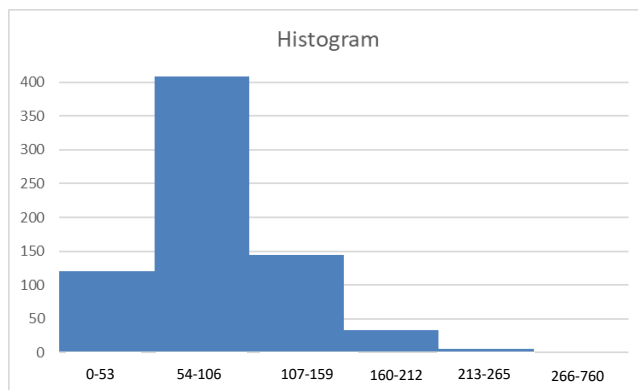
4.
   a. Test value = 0.0973
      p-value = 0.05
      Confidence coefficient = 0.08
      p-value < Confidence coefficient, which means that **the sample is not normally distributed**
   b.

   c. Test value = 0.0825
      p-value = 0.0009
      Confidence level = 99%
      Confidence coefficient = 99/100 = 0.99
      p-value < Confidence coefficient, which means that **the sample is not normally distributed**

   d.