

Q1

Find outliers?

| 850 | 875 | 4700 | 4900 | 5300 | 5700 | 6700 | 7300 | 7700 | 8100 |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 8300 | 8400 | 8700 | 8700 | 8900 | 9300 | 9500 | 9500 | 9700 | 10000 |
| 10300 | 10500 | 10700 | 10800 | 11000 | 11300 | 11300 | 11800 | 12700 | 12900 |
| 13100 | 13500 | 13800 | 14900 | 16300 | 17200 | 18500 | 20300 | 21310 | 21315 |

Q2

Ex Friendly's Department store has been the target of **many shoplifters during the past month**, but owing to increased security precautions, **250 shoplifters have been caught**. Each shoplifters **gender** is noted; also noted is whether the perpetrator **was a first time or repeat offender**. The data are summarized in the below table.

| Gender | First time offender | Repeat offender |
|--------|---------------------|-----------------|
| Male | 60 | 70 |
| Female | 44 | 76 |
| Total | 104 | 146 |

Assuming that an apprehended shoplifter is chosen at random, find:

- (a) The probability that the shoplifter is male
- (b) The probability that the shoplifter is first time offender, given that the shoplifter is male.
- (c) The probability that the shoplifter is female, given that the shoplifter is a repeat offender.
- (d) The probability that the shoplifter is female, given that the shoplifter is a first time offender.
- (e) The probability that the shoplifter is both male and a repeat offender.

Q3

| Product | Calories | Fat |
|--|----------|-----|
| Dunkin's Donuts Iced Mocha Swirl Latte (Whole milk) | 240 | 8 |
| Starbucks Coffee Frappuccino blended coffee | 260 | 3.5 |
| dunkin's Donuts Coffee Coolatta (Cream) | 350 | 22 |
| Starbucks Iced Coffee Mocha Espresso (Whole milk & whipped cream) | 350 | 20 |
| Starbucks Mocha Frappuccino blended coffee (whipped cream) | 420 | 16 |
| Starbucks Chocolate brownie Frappuccino blended coffee (whipped cream) | 510 | 22 |
| Starbucks Chocolate Frappuccino Blended Cream (Whipped cream) | 530 | 19 |

- a) Compute Covariance.
- b) Compute Coefficient of correlation.
- c) Which is valuable in expressing relationship?
- d) What conclusion can you reach about relationship?

Q4 Define discrete probability distribution function explain binomial and poisson distribution in detail. (Write equation, formula for expected value, variance and standard deviation)

Q5 Find covariance & coefficient of correlation.

Find covariance??

| Sr no | City | Hamburger (x) | Movie Tickets (y) |
|-------|----------------|---------------|-------------------|
| 1 | Tokyo | 5.99 | 32.66 |
| 2 | London | 7.62 | 28.41 |
| 3 | New York | 5.75 | 20.00 |
| 4 | Sydney | 4.45 | 20.71 |
| 5 | Chicago | 4.99 | 18.00 |
| 6 | San Francisco | 5.29 | 19.50 |
| 7 | Boston | 4.39 | 18.00 |
| 8 | Atlanta | 3.7 | 16.00 |
| 9 | Toronto | 4.62 | 18.05 |
| 10 | Rio de Janeiro | 2.99 | 9.90 |
| Avg | | 4.98 | 20.12 |