Task 1

Question 1#

Statistics plays a critical role in data science , there are several fundamental rules like descriptive statistics that describes data through mean, median and mode, inferential statistics which makes predictions based on some data and probability which to estimate the outcome of a particular event.

Question 2#

-Mean is the average of some numbers, median is the middle number of some numbers and if their sum is even we got the average of the two middle numbers and mode is the most repeated number in the data

-it will be skewed to right as mode is less than the median which less than the mean

Question 3#

Outliers are numbers which are significantly different from the dataset and it has huge impact on the data where it can make the data unreliable and make it skewed

Question 4#

Probability of getting 9 times head is p(x=9)= 10C9/2\*\*10 = 0.01 approximately

Task 2

Question 1#

AI involves developing of algorithms which depend on human intelligence which can be trained on data to improve their performance

Data science focuses on extraction of knowledge from data through statistics and probability

So data science helps AI to get the data required for the model to train and increase it’s performance

Question 2#

Software 1.0 refers to the traditional programming, where a programmer writes code for a computer to follow where the program will execute the same way every time.

Software 2.0 refers to the machine learning algorithm that creates programs that can adapt and learn from new data so it can make predictions and adapt new situations in a more intelligent way,

So machine learning is related to software 2.0 as it’s more intelligent and can adapt to new situations.

Question 3#

Data science has a better decision making due to large amounts of data, a better insights about the customer so the business can have a better understanding of the customer , also data science can predict future events which helps businesses a lot to know the next move.

Some examples of data science improving business like amazon recommendation engine which suggest to the customer products based on their browse search also uber use data to optimize drivers route and reduce wait rote for passengers.

Question 4#

It’s a metaphor that highlights the increase of importance of data where the data has the potential to be more important and sustainable more than oil and it’s so valuable resource.