

## Mathematics Quiz – Statistics

**Name:**

**You may use a graphing calculator (optional), a pen or pencil and a ruler.**

- What is the probability of rolling a normal die and getting a 4?
- What is the probability of tossing a coin two times and getting heads and then tails?
- What would a normal distribution look like if it was negatively skewed? Draw one and write why it would be called negatively skewed.
- A population was surveyed on how many weekends a year they spend at Green Park. Deduce a five number summary from the following and use the midpoint formula to find the median, Q1 and Q3. Be sure to also create a box and whisker plot in the space provided too.

1, 3, 4, 5, 6, 7, 12, 14, 16, 17, 17, 18, 19, 19, 23, 23, 23, 26, 27, 29, 32, 37, 42, 46

- If plotted, would this show a symmetrical normal distribution or not? Why?

- The probability of passing a driving tests is 0.8. If there were four tests to take to get your license and we make the assumption that all tests have the same probability of passing, then what would be the chance of:

(a) passing all tests

(b) failing all tests

(c) passing two tests

- Show this test fail or pass sequence in a probability tree below

- Why are distributions commonly like normal distributions?

- Deduce the median, mode and mean of the following sample taken by a bunch of photography students and how many photos they took.

3, 4, 5, 6, 7, 7, 7, 8, 9, 10, 11, 12

- What name is given to a distribution that has two peaks?

- Why would we not consider a mean with this sample but rather take a mode or perhaps a median?

12, 13, 14, 14, 14, 16, 17, 54

- What term is given to numbers that do not reflect the rest of the sample? Why may they be omitted from a sample?

- Would we be able to get an entire population survey for what colour is the best colour in the world? Why/Why not?

- What is the difference between sample and sample size?