How certain?

There are many ways of seeing the world and mathematics is one of them. Mathematics appears to be about answers to definite calculations. But we also can think of events that are not certain in a mathematical way.

Consider:

- Will the sun shine tomorrow?

- Will I recover from an illness?

- Will my car break down?

- Will I win the lottery?

These are questions that we might try to answer. If we do, we would usually give the answer as a probability or likelihood.

- In the USA, the weather forecasts tend to give a percentage likelihood for the weather, eg there is a 75 percent likelihood that the day will be sunny.

- We sometimes write the likelihood as a fraction, there is roughly a 1 in 14 million chance of winning the lottery.

- Insurance companies use statistics put together to decide how likely your car will break down so that they can decide what to charge for breakdown insurance. These statistics are put together from information about past car breakdowns, accidents and thefts.

To put numbers to these situations we can:

- think about all the things that can happen and attach a number, eg when throwing an ordinary six-sided dice

- use statistics, eg when looking at past events for car insurance

There are some things it is difficult to put numbers to - and if we do they might be seen as guesses. For example:

- Will a business succeed?

- Will an author have a best seller?

- Will an artist get to number one with their next release?

What information might be involved in thinking about the likelihood of the above happening?