University of Sussex
School of Engineering and Informatics

Mathematics for Computing 2

Assignment 2

Candidate number: 215800

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1 Normal distribution 1

1.1 Amy's chickens

1.1.1 Finding an egg bigger than 8cm in length

$$P(X > 8cm) = 0.1056$$

1.1.2 Finding an egg between 5 cm and 7 cm in length

$$P(5cm > X > 8cm) = 0.468$$

1.2 IQ

1.2.1 What percentage of the population is eligible to join?

0.56% of the population can join MENSA.

1.2.2 How many gifted children would you expect to find in a school of 5000 pupils?

$$0.0004 \cdot 5000 = 2$$

You would expect about 2 gifted children.

2 Normal distribution 2

2.1 Calculate mean and standard deviation

Using Excel I have found the mean to be 99.9193637 and the standard deviation to be 1.049574.

2.2 Normal probability graph

TODO

2.3 Determine the probability that a bolt selected at random would meet the requirements of the aerospace industry project

TODO

3 Binomial distribution 1

3.1 Consignment of pens

3.1.1 What is the probability that the consignment will be accepted if, in general, 5% of the pens are faulty?

The answer can be found by computing the probability that all pens will work AND the probability that only one pen will fail.

The probability of success is 0.95.

There are 10 trials.

Probability of 10 successes = 0.59873693924.

Probability of 9 successes = 0.31512470486.

Probability that the consignment will be returned = 1 - 0.59873693924 - 0.31512470486 = 0.0861383559. Or in a more human friendly format: 8.61%.

3.2 A lift to work

3.2.1 What is the probability that in a working week of 5 days that I will get a lift only twice?

The probability of only getting a lift twice is 0.1323.