4.9 The normal distribution and curve

Checklist

What you should know

By the end of this subtopic you should be able to:

- understand the notation $X \sim N(\mu, \sigma^2)$
- sketch a normal curve given the mean and standard deviation
- use symmetry and complements with given probabilities to find probabilities of other ranges
- use the 0.68, 0.95 and 0.997 estimates to find probabilities involving values 1, 2 and 3 standard deviations from the mean
- use the Normal CDF application on the calculator to find the probability of a range of values given a mean and standard deviation
- use the Inverse Normal application on the calculator to find a value (the quantile) that is above a certain proportion of the data in a distribution.