STAT5002 Weekly Independent Exercises

Sheet 4 - Week 7

STAT5002

1 Confidence intervals (with known population SD)

1.1

A sample of size 100 from a population with known variance $\sigma^2 = 25$ produces a sample mean of 75. Applying the 68%-95%-99.7% rule, construct a 95% confidence interval for the population mean μ. State the assumption required to construct this confidence interval.

1.2

A sample of size 900 from a population with known variance $\sigma^2 = 9$ produces a sample mean of 11. Construct a 99% confidence interval for the population mean μ. You may use the outputs of the following R code for this question.

```
round(qnorm(c(0.985, 0.99, 0.995)), 2)
```

```
[1] 2.17 2.33 2.58
```