6 The weekly profit, in dollars, made by a certain firm has a normal distribution. In the past, the weekly profit had the distribution N(736, 26^2). Following a change in management, the mean weekly profit for 35 randomly chosen weeks is \$725.

(a) Stating a necessary assumption, test at the 2% significance level whether the mean weekly profit has decreased. [6]

The mean weekly profit for another random sample of 35 weeks is found and a similar test is carried out at the 2% significance level.

(b) State the probability of a Type I error. [1]

(c) Given that the mean weekly profit is now in fact \$718, find the probability of a Type II error. [5]

Additional page

If you use the following page to complete the answer to any question, the question number must be clearly shown.