

Additional Exercises from the Textbook (pages 392-394):

1. A motorist wishes to compare petrol prices in Adelaide and rural South Australia. She collected the following data:

	Adelaide	Rural South Australia
Sample Mean	\$1.23	\$1.43
Sample SD	\$0.23	\$0.74
Sample Size	25	21

Use 0.01 level of significance, Is there sufficient evidence that the average petrol price is greater in rural South Australia?

2. A social researcher claims that New Zealanders watch more television than Australians. He takes a random sample of 41 New Zealanders and determines that they watched a daily average of 245 minutes of television with a standard deviation of 34. A sample of 61 Australians averaged 220 minutes with a standard deviation of 23. Test the claim at the 5% level of significance.
3. Do Pinterest shoppers and Facebook shoppers differ with respect to their spending behaviour? A study of browser-based shopping sessions reported that Pinterest shoppers spent a mean of \$153 per order and Facebook shoppers spend a mean of \$85 per order. Suppose the study consisted of 500 Pinterest shoppers and 500 Facebook shoppers, and the standard deviation of the order value was \$150 for Pinterest shoppers and the standard deviation value was \$80 for Facebook shoppers. At 0.05 level of significance, is there sufficient evidence of a significant difference in the mean order value between Pinterest and Facebook shoppers?
4. The owner of a restaurant that serves Continental-style entrées has the business objective of learning more about the patterns of patron demand during the weekend period from Friday to Sunday. She decided to study the demand for desserts during this period. In addition to studying whether a dessert was ordered, she will study the gender of the individual and whether a beef entrée was ordered. Data were collected from 360 customers and organised in the following contingency tables.

	Gender		
Dessert ordered	Male	Female	Total
Yes	50	96	146
No	250	234	484
Total	300	330	630

	Beef entrée		
Dessert ordered	Yes	No	Total
Yes	74	68	142
No	123	365	488
Total	197	433	630

- a. At the 0.05 level of significance, is there sufficient evidence of a significant difference between males and females in the proportion of those who ordered desserts?
- b. At the 0.05 level of significance, is there sufficient evidence of a significant difference in the proportion of those who ordered dessert based on whether or not a beef entrée has been ordered?