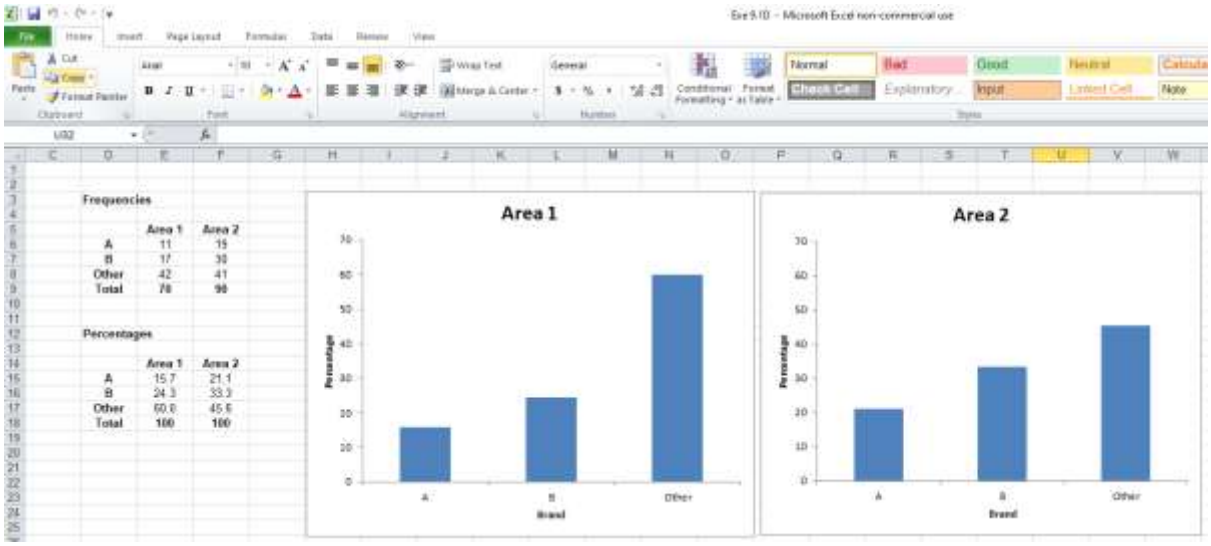
Exercise 9.1

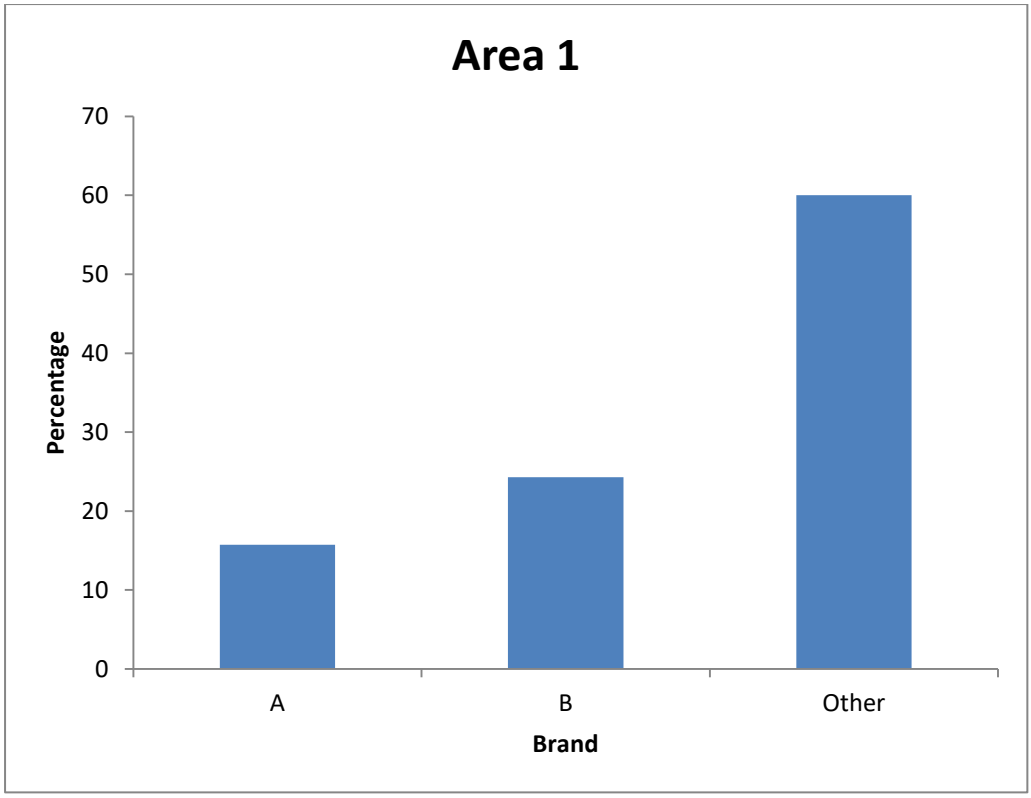
Open the Excel workbook in **Exe 9.1D.xlsx** from the Exercises folder. This contains the percentage frequencies together with the bar chart just created in the above example. Add a percentage frequency bar chart showing the brand preferences in Area 2, using the same format as that employed for the Area1 results in the above example. Drag your new chart so that it lies alongside that for Area 1.

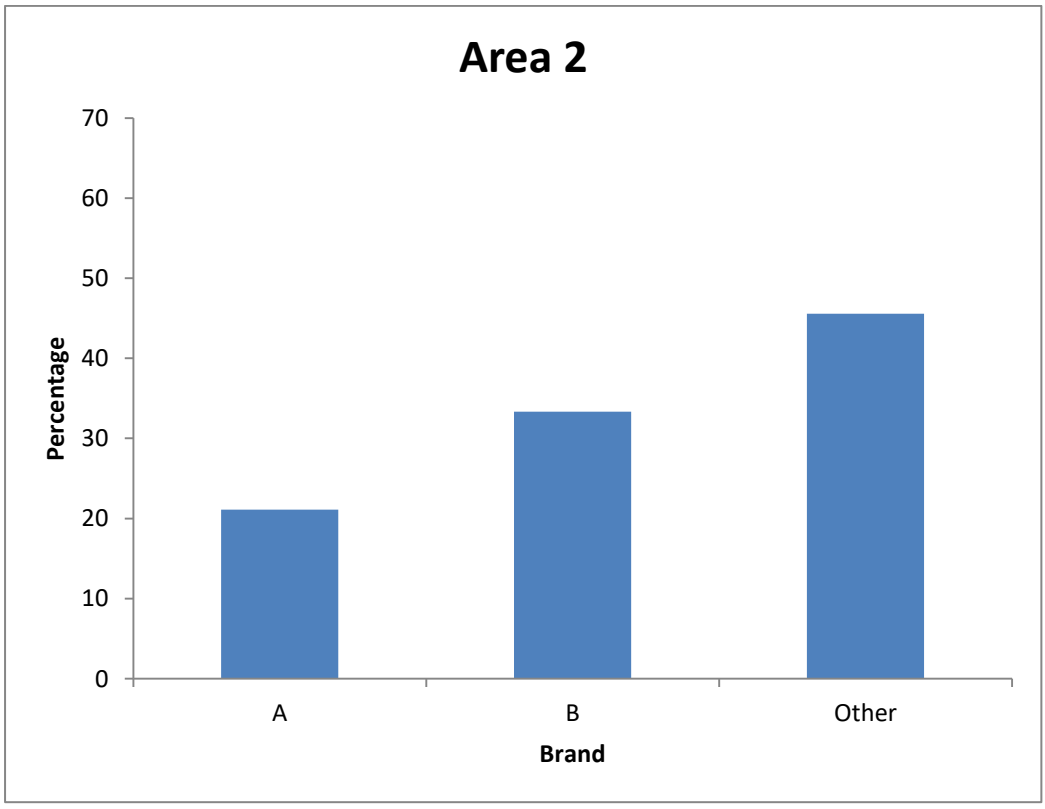
Briefly interpret your findings. What do these results tell you about the patterns of brand preferences for each of the two demographic areas?

Solution: 9.1:

Excel screenshot:







Brand preferences exhibit contrasting patterns in the two demographic areas. In Area 1, "Other" breakfast cereals have a notable preference, with neither Brand A

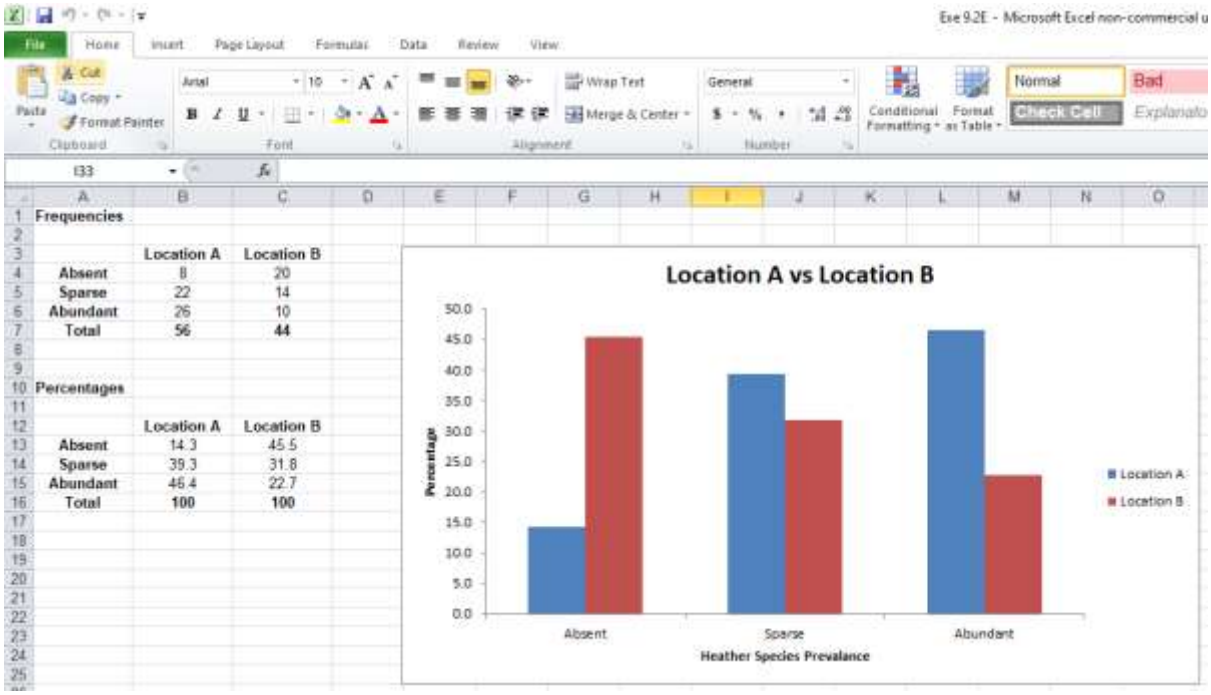
nor Brand B dominating the market. On the other hand, in Area 2, both Brand A and Brand B enjoy a stronger preference, although "Other" cereals still maintain a significant presence. These trends imply that consumer preferences for breakfast cereals differ between the two areas, with Area 2 displaying a comparatively higher affinity for Brands A and B.

Exercise 9.2

Open the Excel workbook in **Exe 9.2E.xlsx** from the Exercises folder. This contains the frequency distributions for Data Set E (see the Data Annexe) to which has been added the corresponding percentage frequency distributions. Complete a percentage frequency clustered column bar chart showing the heather species prevalences in the two different locations.Briefly interpret your findings

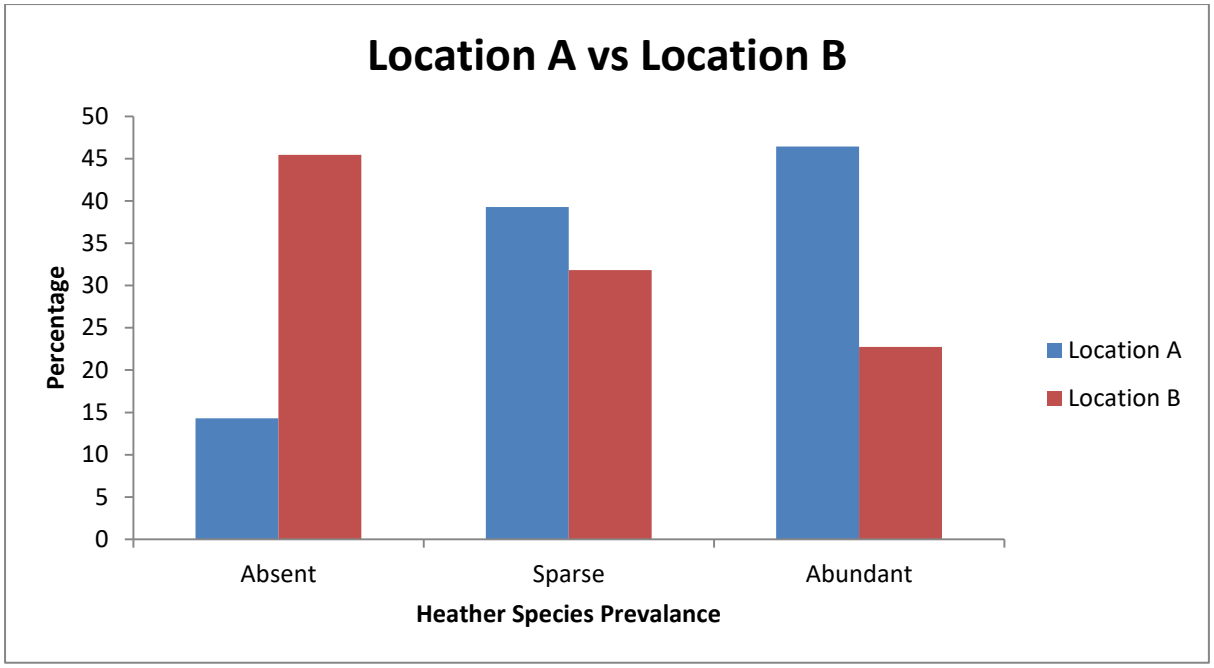
Solution 9.2:

Excel screenshot:



Frequencies		
	Location A	Location B
Absent	8	20
Sparse	22	14
Abundant	26	10
Total	56	44
Percentages		
	Location A	Location B
Absent	14.3	45.5
Sparse	39.3	31.8
Abundant	46.4	22.7
Total	100	100

In a research project examining the occurrence of a specific heather species, two distinct heathland sites, labeled as A and B, were investigated. Multiple defined land sections, known as transepts, were observed at each site and categorized based on the presence of the species under study, with classifications being Absent, Sparse, or Abundant. The percentage of its presence in each sites were represented in the below clustered bar chart.

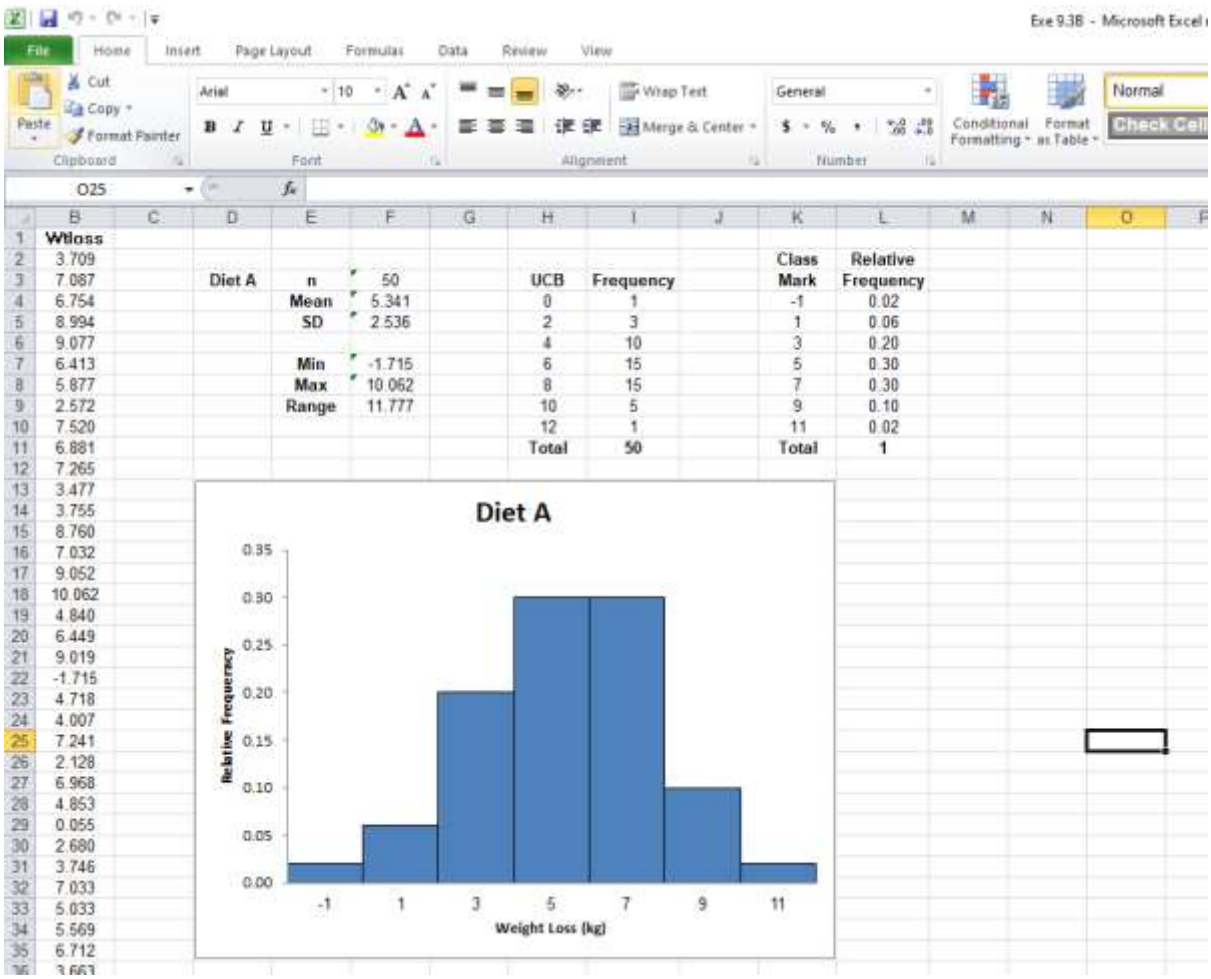


The above chart shows clearly that the prevalence of the heather species differs between the two locations. Location A has a higher proportion of transepts with abundant heather species presence, while Location B has a higher proportion of transepts where the heather species is absent.

Exercise 9.3
Open the Excel workbook in **Exe 9.3B.xlsx** from the Exercises folder. This contains the relative frequency histogram for the Diet A weight loss produced in Example 9.3 together with some of the Diet B weight loss summary statistics. Add a relative frequency histogram of the weight loss for Diet B, where possible using the same classes as those employed for the Diet A results in the above example.
Briefly interpret your histogram. What do these results tell you about the patterns of weight loss for each of the two diets?

Solution 9.3:

Excel screenshot:

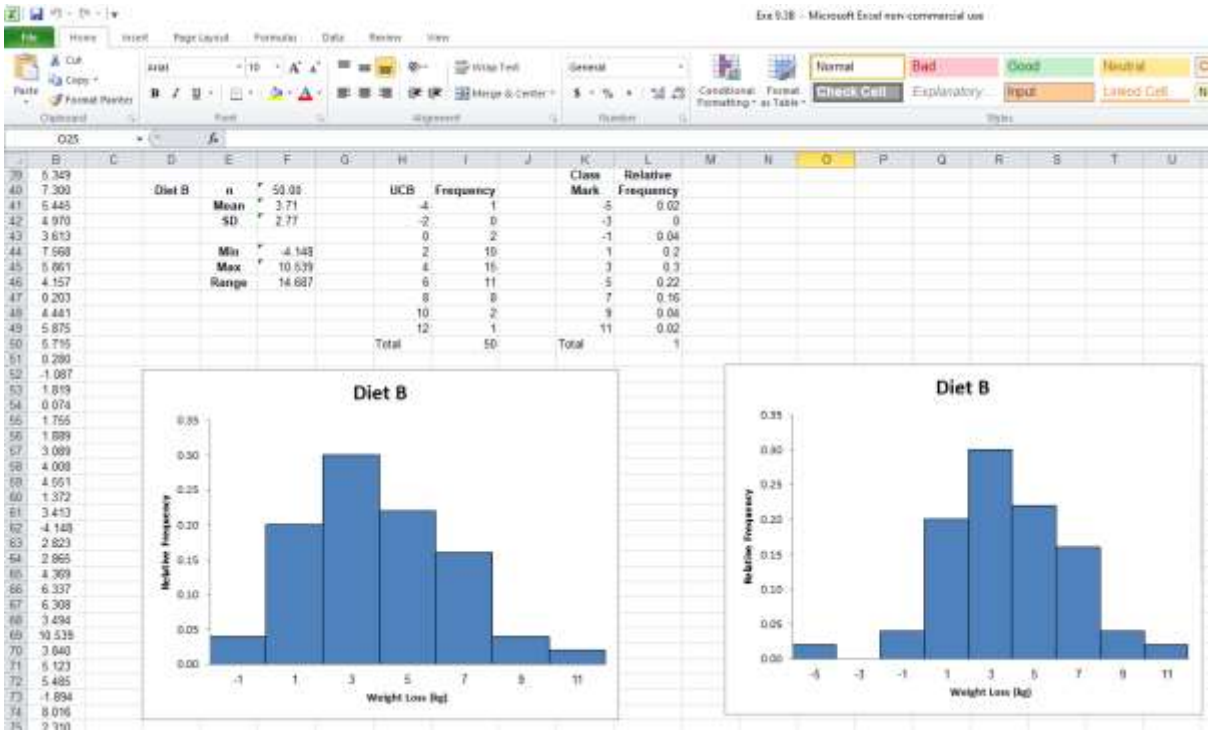


	Wtloss
2	3.709
3	7.087
4	6.754
5	8.994
6	9.077
7	6.413
8	5.877
9	2.572
10	7.520
11	6.881
12	7.265
13	3.477
14	3.755
15	8.760
16	7.032
17	9.052
18	10.062
19	4.840
20	6.449
21	9.019
22	-1.715
23	4.718
24	4.007
25	7.241
26	2.128
27	6.968
28	4.853
29	0.055
30	2.680
31	3.746
32	7.033
33	5.033
34	5.569
35	6.712

Diet A		
	n	50
	Mean	5.341
	SD	2.536
	Min	-1.715
	Max	10.062
	Range	11.777

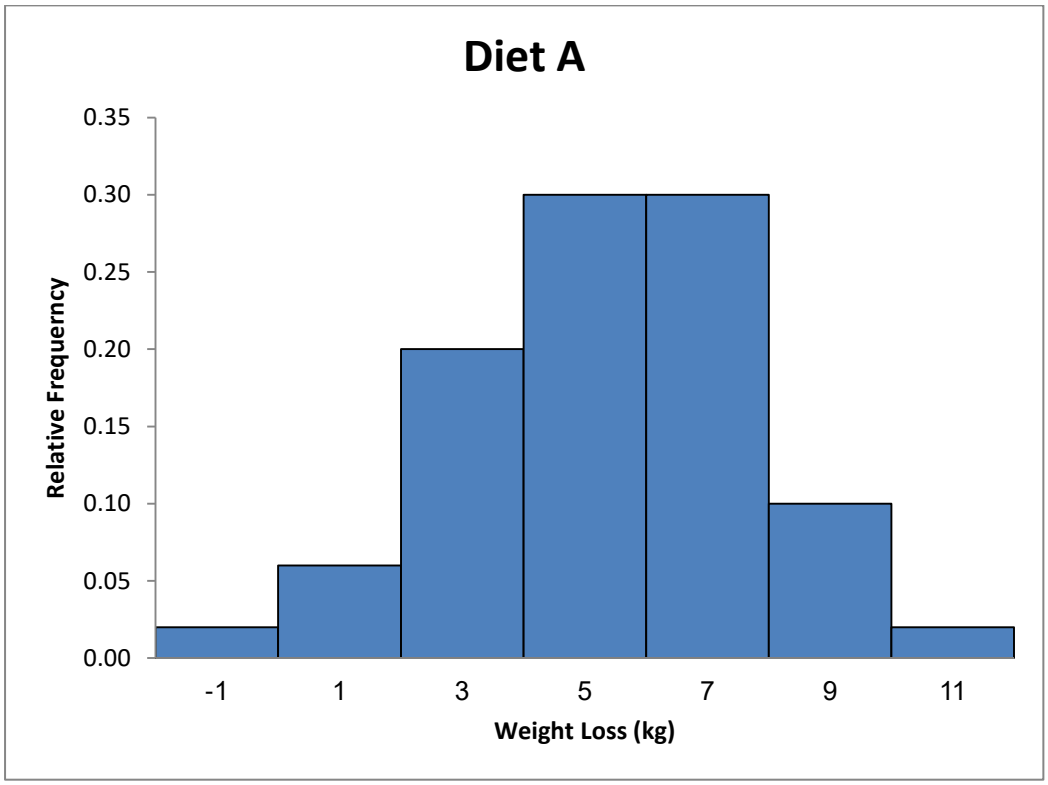
UCB	Frequency
0	1
2	3
4	10
6	15
8	15
10	5
12	1
Total	50

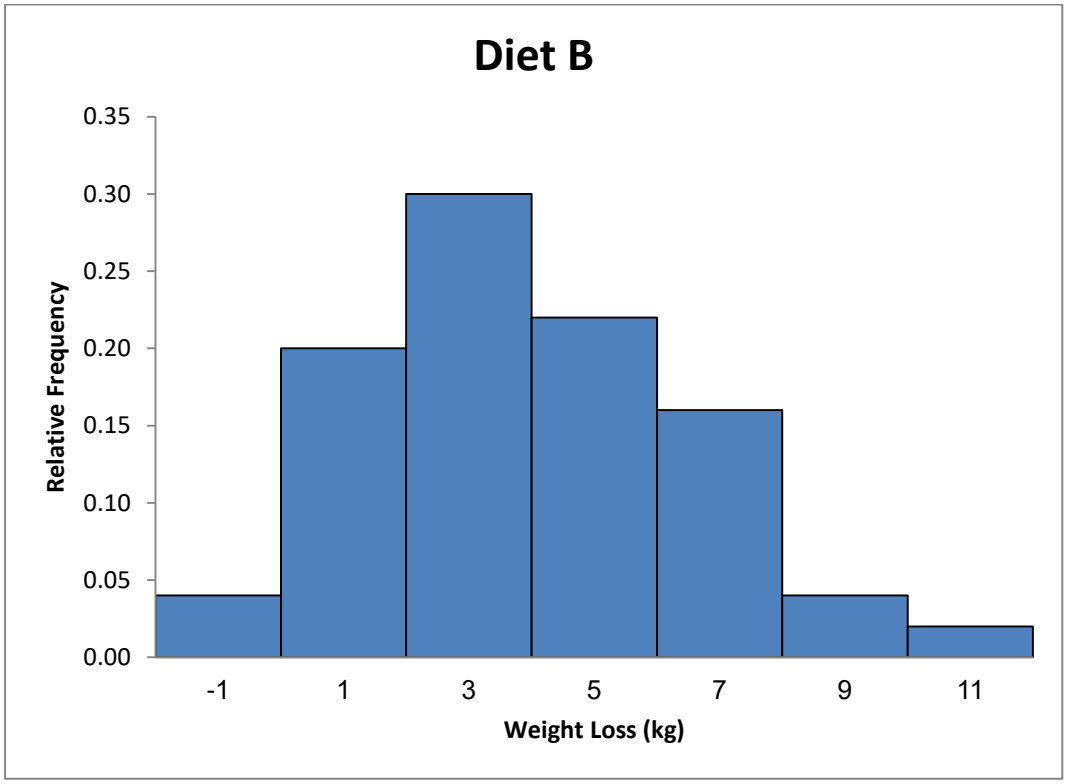
Class Mark	Relative Frequency
-1	0.02
1	0.06
3	0.20
5	0.30
7	0.30
9	0.10
11	0.02
Total	1



These data relate to the weight losses achieved by two separate samples of 50 human subjects, each of whom undertook one of two different weight reducing diets (A or B).

Relative Frequency histogram





Diet A's relative frequency distribution is negatively skewed, while Diet B's is positively skewed, indicating that Diet B has a higher frequency of lower weight loss outcomes compared to Diet A.