Store	Con1	Con2
1	141	118
2	184	167
3	132	137
4	161	168
5	176	175
6	196	197
7	169	143
8	199	169
9	150	123
10	218	197

t-Test: Paired Two Sample for Means

	Con1	*Con2*
Mean	172.6	159.4
Variance	750.2666667	789.3777778
Observations	10	10
Pearson Correlation	0.863335004	
Hypothesized Mean Difference	0	
df	9	
t Stat	2.874702125	
P(T<=t) one-tail	0.009167817	
t Critical one-tail	1.833112933	
P(T<=t) two-tail	0.018335635	
t Critical two-tail	2.262157163	

Difference in Means	13.2

Interpretation

These results come from comparing sales figures in 10 stores under two container designs, Con1 and Con2. Each store tested both designs, so the data are paired observations.

The average sales under Con1 is 172.6, while the average under Con2 is 159.4, giving a difference of about 13.2 items sold per store. The two-tailed p-value of 0.018 is below the conventional 0.05 cutoff, suggesting this difference is statistically significant. In practical terms, these findings indicate that Con1 is likely to achieve higher sales than Con2.

DATA SET F (Designs.xlsx)

The market research staff at a detergent manufacturing company is considering two new, different container designs for a kitchen cleaning product. A pilot study was conducted by placing both containers of the product on sale at the same price in a sample of 10 retail stores for a fixed period of time. The numbers of items of the product sold were recorded for each container design.

Variable	Description
Store	store identification number (1 – 10)
Con1	number of items sold, Container Design 1
Con2	number of items sold, Container Design 2

The data are as follows

Store	Con1	Con2
1	141	118
2	184	167
3	132	137
4	161	168
5	176	175
6	196	197
7	169	143
8	199	169
9	150	123
10	218	197