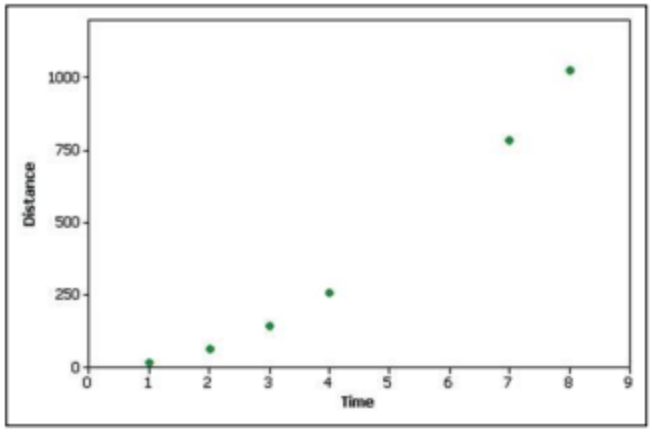
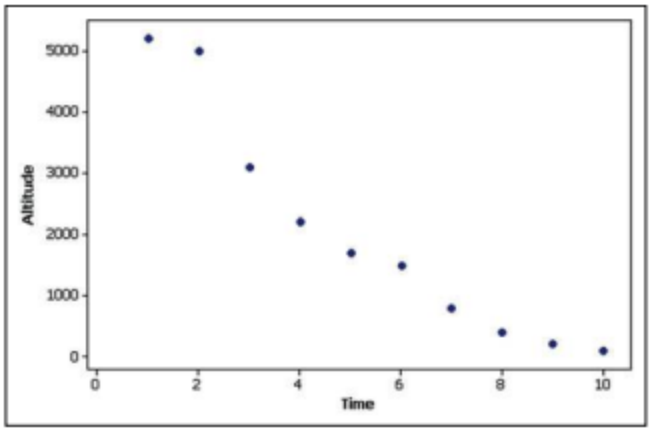
In Exercises 5 and 6, use the scatterplot to find the value of the rank correlation coefficient r_s and the critical values corresponding to a 0.05 significance level used to test the null hypothesis of $\rho_s = 0$. Determine whether there is a correlation.

5. Distance/Time Data for a Dropped Object



6. Altitude/Time Data for a Descending Aircraft



Testing for Rank Correlation. ***In Exercises 7–12, use the rank correlation coefficient to test for a correlation between the two variables. Use a significance level of $\alpha = 0.05$.***

7. Are the Best Televisions the Most Expensive? The following table lists overall quality scores and prices of 40-inch LCD televisions (based on data from *Consumer Reports*). Do these data suggest that you can get better quality by spending more?

Quality score	74	71	68	65	63	62	57
Price (dollars)	2700	3000	3800	2300	2000	1300	1400

8. Are the Best Paints the Most Expensive? The following table lists overall quality scores and prices for a gallon of exterior paints (based on data from *Consumer Reports*). Do these data suggest that you can get better quality by spending more?

Quality score	90	87	82	78	62	56	23	19
Price (dollars)	27	32	19	15	39	24	15	18

9. Judges of Marching Bands Two judges ranked seven bands in the Texas state finals competition of marching bands (Coppell, Keller, Grapevine, Dickinson, Poteet, Fossil Ridge, Heritage), and their rankings are listed below (based on data from the University Interscholastic League). Test for a correlation between the two judges. Do the judges appear to rank about the same or are they very different?

Band	Cpl	Klr	Grp	Dck	Ptt	FR	Her
First judge	1	3	4	7	5	6	2
Second judge	6	4	5	1	3	2	7

10. Judges of Marching Bands In the same competition described in Exercise 9, a third judge ranked the bands with the results shown below. Test for a correlation between the first and third judges. Do the judges appear to rank about the same or are they very different?

Band	Cpl	Klr	Grp	Dck	Ptt	FR	Her
First judge	1	3	4	7	5	6	2
Third judge	3	4	1	5	7	6	2