

Ex Listed below are the number of times a cricket chirps in 1 minute and the corresponding temperature in °F (based on data from *The Song of Insects*, by George W. Pierce, Harvard University Press). [Triola, 13th Edition 10.1 #22]

Chirps in 1 minute	882	1188	1104	864	1200	1032	960	900
Temperature (°F)	69.7	93.3	84.3	76.3	88.6	82.6	71.6	79.6

- (a). Construct a scatter plot.
- (b). Find the correlation coefficient r .
- (c). Find the P -value.
- (d). Use a significance level of $\alpha = 0.05$ to determine whether evidence supports the claim of a linear correlation.
- (e). Find the regression equation.
- (f). Find the best predicted temperatures when a cricket chirps 1000 times in 1 minute. Does the answer seem realistic? Why or why not?
- (g). Find the best predicted temperatures when a cricket chirps 3000 times in 1 minute. Does the answer seem realistic? Why or why not?

Ex Listed below are duration times (sec) and time intervals (min) to the next eruption for randomly selected eruptions of Old Faithful Geyser in Yellowstone National Park. [Triola, 13th Edition 10.1 #14]

Duration (sec)	242	255	227	251	262	207	140
Interval After (min)	91	81	91	92	102	94	91

- (a). Construct a scatter plot.
- (b). Find the correlation coefficient r .
- (c). Find the P -value.
- (d). Use a significance level of $\alpha = 0.05$ to determine whether evidence supports the claim of a linear correlation.
- (e). Find the regression equation.
- (f). Find the best predicted “interval after” time for an eruption with a duration of 253 seconds.

How does it compare an actual eruption eruption with a duration of 253 seconds and an interval after time of 83 minutes?

Homework: For each of the following problems, (a) Find the regression line $y = a + bx$ and (b) Find the best predicted value asked for in the problem. Note: Each problem is related to the same problem in Section 10.1. Be sure to use the results of whether a linear correlation exists or not from Section 10.1 to determine the best predicted value.

Section 10.2, p. 499: #15, 17, 19, 21, 23, 25