Linear Regression and Correlation: Prediction*

Susan Dean
Barbara Illowsky, Ph.D.

This work is produced by The Connexions Project and licensed under the
Creative Commons Attribution License †

Abstract

This module provides an overview of Linear Regression and Correlation: Prediction Up one level as a part of Collaborative Statistics collection (col10522) by Barbara Illowsky and Susan Dean.

The exam scores **(x-values)** range from 65 to 75. Suppose you want to know the final exam score of statistics students who received 73 on the third exam. **Since 73 is between the x-values 65 and 75**, substitute $x = 73$ into the equation. Then:

$$\hat{y} = -173.51 + 4.83\,(73) = 179.08 \tag{1}$$

We predict that a statistics student who receives a 73 on the third exam will receive 179.08 on the final exam. **Remember, do not use the regression equation to predict values outside the domain of x.**

Example 1
Recall the third exam/final exam example.

Problem 1
What would you predict the final exam score to be for a student who scored a 66 on the third exam?

Solution
145.27

Problem 2 ***(Solution on p. 2.)***
What would you predict the final exam score to be for a student who scored a 78 on the third exam?

*Version 1.6: Oct 27, 2008 6:34 pm -0500
†http://creativecommons.org/licenses/by/2.0/

Solutions to Exercises in this Module

Solution to Example 1, Problem 2 (p. 1)

78 is outside of the domain of x values (independent variables), so you cannot reliably predict the final exam score for this student.