

**GC 21. Ideal Partner Height** In an introductory statistics course at Cornell university, 147 undergraduates were asked their own height and the ideal height for their ideal spouse or partner. For this exercise, we are including the data for only a representative sample of 10 of the students, as given in the following table. All heights are in inches. **Source: Chance** [Lee, Grace, Paul Velleman, and Howard Wainer, "Giving the Finger to Dating Services," *Chance*, Vol. 21, No. 3, 2008, p. 59-61]

Height	Ideal Partner's Height
59	66
62	71
66	72
68	73
71	75
67	63
70	63
71	67
73	66
75	66

- a.** Find the regression line and correlation coefficient for this data. What strange phenomenon do you observe?
- b.** The first five data pairs are for female students and the second five for male students. Find the regression line and correlation coefficient for each set of data.
- WRIT c.** Plot all the data on one graph, using different types of points to distinguish the data for the males and for the females. Using this plot and the results from part b, explain the strange phenomenon that you observed in part a.

ANS

**21. a.**  $Y = -0.08915x + 74.28$ ,  $r = -0.1034$ . The taller the student, the shorter is the ideal partner's height. **b.** Females:  $Y = 0.6674x + 27.89$ ,  $r = 0.9459$ ; males:  $Y = 0.4348x + 34.04$ ,  $r = 0.7049$

