

## Chapter 4 Selected Answers to Mastery Items

1. You must have made a computational error, because the maximum value  $r$  can be is  $\pm 1.0$ .
2. It is an example of a high (or strong) negative correlation.
3. It is moderately high.
4. The correlation is  $-.637$ .
5. The correlation is  $.889$ .
7.  $r^2 = (.50)^2 = .25$   
The box should indicate that 25% (i.e.,  $.25 \times 100$ ) of the variance is shared between the two variables. (Box should be one-quarter shaded.)
8. Marathon runners who have higher  $VO_2\text{max}$  values will run faster (have lower times).
9. The epidemiologist is incorrectly assuming a cause-and-effect relationship.
10. The correlations will generally be higher for those students in grades 7 through 9 because of a larger variance in the variables. The variance would be more restricted if you choose to use a single grade (see figure 4.6).
11.  $r = 1.00$
12.  $Y' = -0.128 * X + 25.888$   
 $Y' = -0.128 * 160 + 25.888$   
 $Y' = 5.408$
13.  $b = -.128$ ;  $c = 25.888$
15. You could adjust strength scores for a person's body weight.  
You could adjust a person's posttest score for the pretest score.