

## Answer Key: Bivariate Correlation

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|---|---|--|
| 1.) $r=.67, n=26$<br>at .05, $CV=.388$ , reject<br>at .01, $CV=.496$ , reject | $r=.45, n=31$<br>at .05, $CV=.355$ , reject<br>at .01, $CV=.456$ , accept | $r=-.74, n=20$<br>at .05, $CV=-.444$ , reject<br>at .01, $CV=-.561$ , reject |
| $r=.39, n=26$<br>at .05, $CV=.388$ , reject<br>at .01, $CV=.496$ , accept     | $r=.95, n=9$<br>at .05, $CV=.666$ , reject<br>at .01, $CV=.798$ , reject  | $r=-.48, n=14$<br>at .05, $CV=-.532$ , accept<br>at .01, $CV=-.661$ , accept |

2.) Your answer

3.) Researchers found that as parents' control of their children's eating increases, the child participates in fewer extra-curricular activities. Also, the less appropriate parents' attitudes about nutrition, the more TV the children watch. (answers vary regarding "causes")

4.) Positive; positive; negative; negative; zero  
(interpretations vary)

5.) Your answer

6.)  $-.001, .09, -.27, .56, -.98, 1.00$ . For  $r=-.27$ , this correlation suggests that as students earned more psych credits, their interest in graduate school tended to decline.

7.) Your answer (HINT: Make sure that you list your specific variables and that the scale of measurement for each variable is clear. That's the key to deciding on the type of correlation analysis—knowing whether your data are nominal, ordinal, interval or ratio.)

8.) PRINTOUT from SPSS, Excel or other online source

**6a.** A *Pearson r* correlation analysis was conducted to determine whether there is no relationship between amount of exercise and resting heart rate. **6b.** There was sufficient evidence to reject the null hypothesis,  $r(5) = -.95$ ,  $p < .05$ . **6c.** Resting heart rate and weeks of exercise are significantly and inversely related. In other words, as exercise goes up, heart rate goes down, with some degree of predictability. **6d.** (answers vary) Because these two variables are so closely related and research has demonstrated significant health benefits that come with exercise and reduced heart rate, greater efforts should be made to increase public participation in regular fitness routines. I know. I know...Duh!! ☺

$r^2 = 90\%$ . This means that 90% of the variability in “weeks of exercise” is shared by heart rate. In other words, about 90% of the factors that underlie an increase in regular exercise are also associated with a decrease in heart rate. To put it in more concrete or meaningful terms, we might theorize that this 90% includes feeling better psychologically, strengthening muscles, increasing oxygen flow in the blood, etc. All of these are relevant to changes in both exercise and heart rate.

9.) Your answer