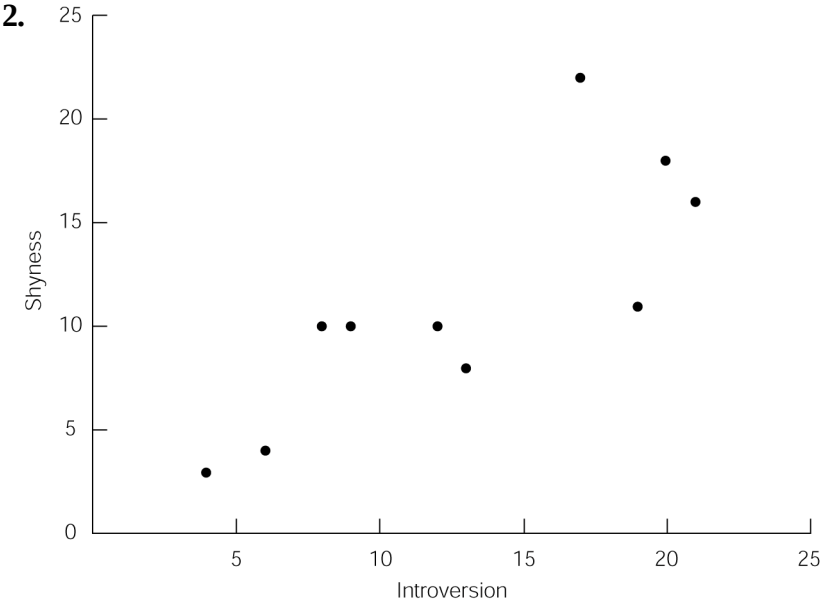
Problems

1. **a.** negatively correlated
b. positively correlated
c. negatively correlated
d. not correlated
e. negatively correlated
f. not correlated
g. positively correlated

2.



Scatterplot of introversion and shyness.

$r(8) = .81$, $p < .01$; there is a significant positive correlation between introversion and shyness. $r^2 = .66$.

3. $\hat{Y} = 0.79X + 1.01$. If $X = 15$, $\hat{Y} = 12.86$.

4. $r = .92$. $r(15) = .92$, $p < .01$. There is a significant positive correlation between first and last exam scores.
$\hat{Y} = 0.66X + 31.4$
If $X = 95$, $\hat{Y} = 94.1$ or 94. If $X = 55$, $\hat{Y} = 67.7$ or 68.

5. $r_S = .93$, $p < .01$. There is a significant positive relationship between the rankings.

6. $r(6) = .96$, $p < .01$. There is a significant positive relationship between time spent reading the paper and recognition of current events. $r^2 = .92$.

7. $r(7) = -.96$, $p < .01$. The weight of the car is inversely related to its gas mileage.

8. $\hat{Y} = -5.63X + 31.33$. If $X = 4.3$ (4,300 pounds), $\hat{Y} = 7.12$ mpg.

9. $r_S = -.07$, $p > .05$. The correlation between the ratings is not significant.

10. $r_S = .96$, $p < .01$. There is a significant positive correlation between the ratings of the experimenters.

11. $r(8) = .84$, $p < .01$. There is a significant positive relationship for heart rates of subjects viewing different stimuli.