Problems

1. a. $s_{\bar{X}_1 - \bar{X}_2} = 1.62$

    b. $s_{\bar{X}_1 - \bar{X}_2} = 0.67$

    c. $s_{\bar{X}_1 - \bar{X}_2} = 0.41$

2. $t(33) = -4.41, p < .01$. Pilots made fewer errors (failure to respond) than navigators.
3. $t(7) = 2.95, p < .05$. The adults with a family history of alcoholism had a higher level of the metabolite of alcohol in their blood 30 minutes after drinking alcohol.
4. $t(30) = -15.89, p < .01$. Performance was better on the recognition test; more nouns were recognized than were recalled.
5. a. Yes, this is an attempted replication of an effect in which "stupid" rats perform worse than "intelligent" rats. Group "Stupid" should have a larger mean number of errors than Group "Intelligent."

    b. $t(28) = 5.70, p < .005$, one-tailed test. Group "Stupid" rats made more errors.
6. $t(9) = -3.39, p < .01$. The average heart rate increased following exposure to the slides of known conservatives.
7. $t(48) = 2.91, p < .01$. The final averages were higher in the lecture group.
8. $t(1,356) = -2.59, p < .01$. The average freshman ACT score at Private University is higher than at State University. Even though there is little difference in the means, the large sample sizes result in a small standard error and a more powerful test.
9. $t(9) = 2.42, p < .05$. There was less error in distance estimation when the student used both eyes.
10. $t(26) = 1.50, p > .05$. Children and young adults did not differ in ESP ability.