In a study examining the relation of math ability to belief that math ability was innate, belief was considered the predictor variable. The scores for participants are shown below:

|  |  |
| --- | --- |
| Math Ability | Belief that math ability is innate |
| 66 | 7 |
| 70 | 4 |
| 50 | 10 |
| 45 | 12 |
| 57 | 6 |
| 65 | 6 |

a) Make a scatter plot of the scores.   
b) Describe the patter of association.   
c) Use the six steps of hypothesis testing to determine if there is a significant relationship between math ability and innateness belief, using the p <.05 criterion.

A cognitive psychology conducted a study of whether familiarity of words predicts the time it takes to press a button indicating whether a word is singular or plural. All participants being given the same words. Familiarity with words was rated at a later time a on 7 point scale (high = familiar), and the scores are listed below.

|  |  |
| --- | --- |
| Familiarity | Response Time |
| 6 | 1.25 |
| 2 | 3.16 |
| 3 | 2.84 |
| 4 | 2.05 |
| 5 | 1.75 |
| 6 | 1.04 |
| 3 | 2.25 |

a) Write out the regression equation.   
b) Does familiarity predict response time? Write out the six steps to hypothesis testing using the p < .05 level.   
c) Predict the reaction time for a person who rates familiarity as a 5.   
d) Include a scatter plot with a line of best fit.

A new school district superintendent preparing to reallocate resources for physically impaired students wanted to know if the schools in the district differed in the distribution of physically impaired. The superintendent tested samples of 20 students from each of the five schools and found 4 physically impaired (and 16 unimpaired) students at School 1, 1 physically impaired (and 19 unimpaired) at School 2, 6 (and 14) at School 3, 3 (and 17) at School 4, and 7 (and 13) at School 5. Using the .01 significance level, is the distribution of physically impaired students different at different schools?   
a) Use the six steps of hypothesis testing.   
b) Figure a measure of effect size and indicate whether it is small, medium, or large.

When examining teaching evaluations for statistics, you want to know the best professor to take. You look at their recent ratings. Professor A has 25 very favorable ratings, 20 favorable ratings, 10 neutral ratings, 5 unfavorable ratings, and 4 very unfavorable ratings. Would you recommend this professor using the p < .05 level?   
a) Use the six steps of hypothesis testing.