The district manager of Jason’s, a large discount electronics chain, is investigating why certain stores in her region are performing better than others. She believes that three factors are related to total sales: the number of competitors in the region, the population in the surrounding area, and the amount spent on advertising. From her district, consisting of several hundred stores, she selects a random sample of 30 stores. For each store she gathered the following information.

**Analysis of variance**

**SOURCE DF SS MS**

**Regression 3 3050.00 1016.67**

**Error 26 2200.00 84.62**

**Total 29 5250.00**

**Predictor Coef StDev t-ratio**

**Constant 14.00 7.00 2.00**

***X*1 -1.00 0.70 -1.43**

***X*2 30.00 5.20 5.77**

***X*3 0.20 0.08 2.50**

**a.** What are the estimated sales for the Bryne store, which has four competitors, regional population of 0.4 (400,000), and advertising expense of 30 ($30,000)?

**b.** Compute the R2 value.

**c.** Compute the multiple standard error of estimate.

**d.** Conduct a global test of hypothesis to determine whether any of the regression coefficients are not equal to zero. Use the .05 level of significance.

**e.** Conduct tests of hypotheses to determine which of the independent variables have significant regression coefficients. Which variables would you consider eliminating? Use the .05 significance level.