Meryl’s Apparel is an upscale chain of women’s clothing stores, located primarily in the southwest United States. Due to recent success, Meryl’s top management is planning to expand by locating new stores in other regions of the country. The director of planning has been asked to study the relationship between yearly sales and the store size. As part of the study, the director selects a sample of 25 stores and determines the size of the store in square feet and the sales for last year. The sample data follow. The use of statistical software is suggested.

|  |  |  |  |
| --- | --- | --- | --- |
| **Store Size (thousands of square feet)** | **Sales**  **(millions $)** | **Store Size (thousands of square feet** | **Sales**  **(millions $)** |
| 3.7 | 9.18 | 0.4 | 0.55 |
| 2.0 | 4.58 | 4.2 | 7.56 |
| 5.0 | 8.22 | 3.1 | 2.23 |
| 0.7 | 1.45 | 2.6 | 4.49 |
| 2.6 | 6.51 | 5.2 | 9.90 |
| 2.9 | 2.82 | 3.3 | 8.93 |
| 5.2 | 10.45 | 3.2 | 7.60 |
| 5.9 | 9.94 | 4.9 | 3.71 |
| 3.0 | 4.43 | 5.5 | 5.47 |
| 2.4 | 4.75 | 2.9 | 8.22 |
| 2.4 | 7.30 | 2.2 | 7.17 |
| 0.5 | 3.33 | 2.3 | 4.35 |
| 5.0 | 6.76 |  |  |

1. Draw a scatter diagram. Use store size as the independent variable. Does there appear to be a relationship between the two variables. Is it positive or negative?
2. Determine the correlation coefficient and the coefficient of determination. Is the relationship strong or weak? Why?
3. At the 0.5 significance level, can we conclude there is a significant positive correlation?