BUSINESS ANALYTICS USING STATISTICAL MODELING – ASSIGNMENT 1

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1. What is the 5th element in the original list of correct grades?

```
> exam$scores[5]
[1] 65
```

2. What is the 5th lowest grade?

```
> sort(exam$scores)[5]
[1] 51
```

3. Extract the five lowest grades together

```
> sort(exam$scores)[1:5]
[1] 10 18 48 49 51
```

4. Get the five highest scores by first sorting exam$scores in decreasing order.

```
> sort(exam$scores, decreasing = TRUE)[1:5]
[1] 100  95  94  91  90
```

5. What is the standard deviation of scores?

```
> sd(exam$scores)
[1] 17.23826
```

6. Make a new variable called scores_diff, with the difference between each grade and the mean grade

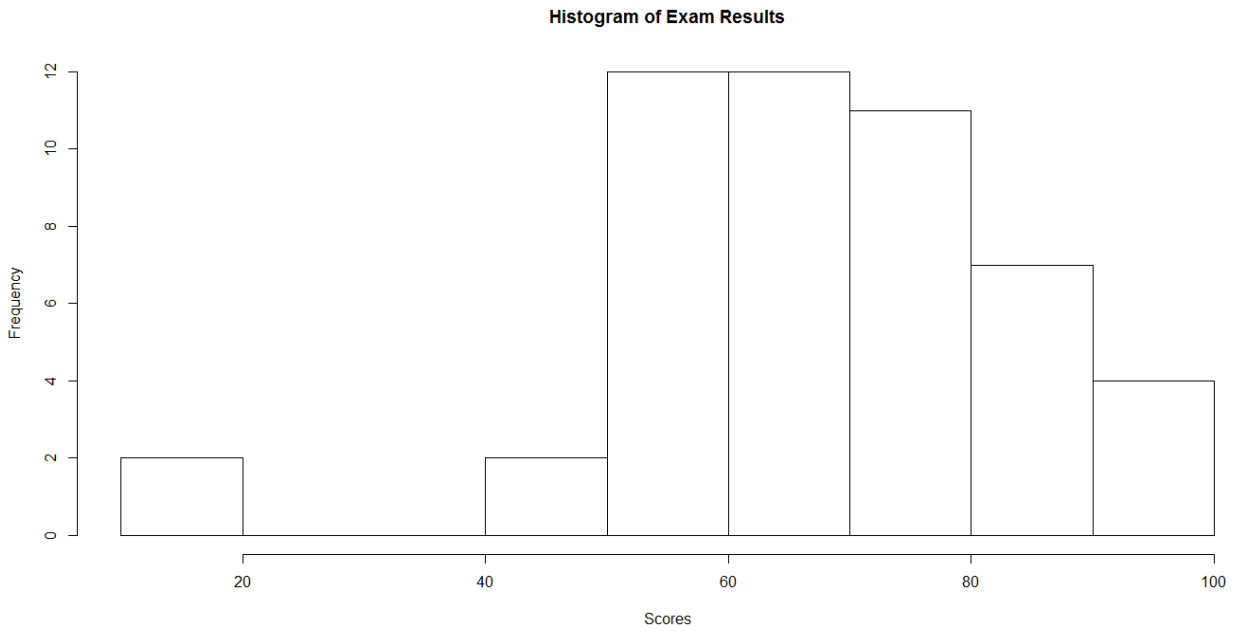
```
> scores_diff <- abs(exam$scores - mean(exam$scores))
```

7. What is the average “difference between each grade and the mean of all grades”?

```
> mean(scores_diff)
[1] 12.6864
```

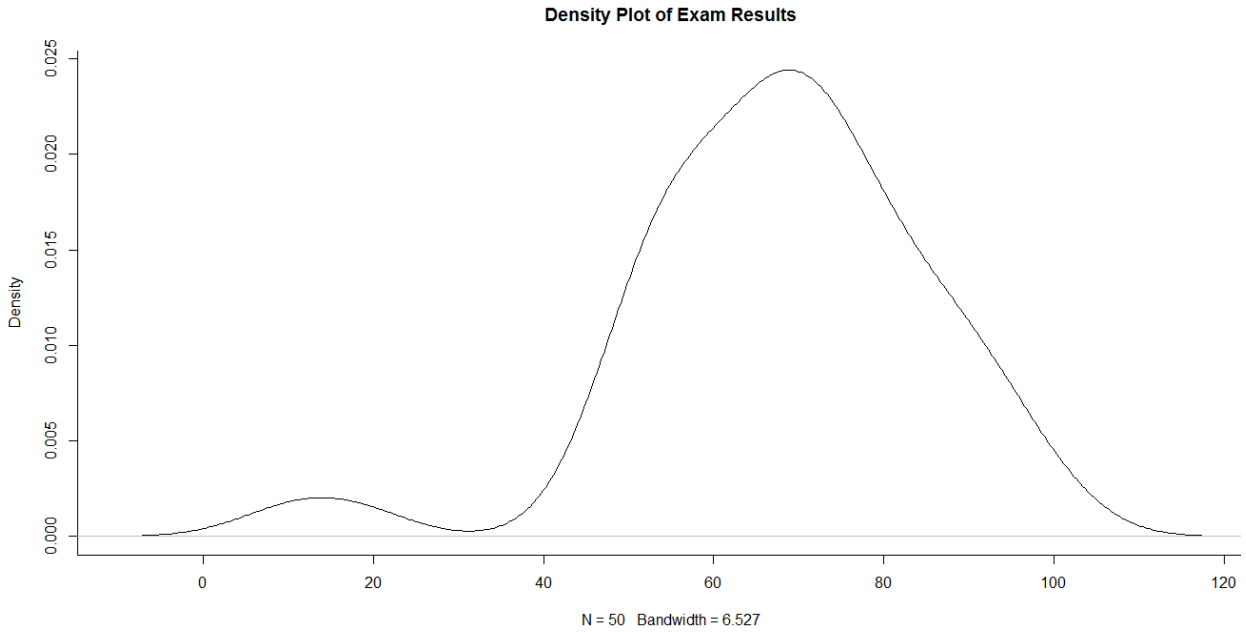
8. Visualize the data as we did in class:
    a. Histogram

```
> hist(exam$scores, main = 'Histogram of Exam Results', xlab = 'Scores')
```



    b. Density plot

```
> plot(density(exam$scores), main = 'Density Plot of Exam Results', bty = 'l')
```



c. Boxplot + stripchart

```
> boxplot(exam$scores, horizontal = TRUE, xlab = 'Scores',
+         main = 'Boxplot + Strip-Chart of Exam Results')
> stripchart(exam$scores, method = 'stack', add = TRUE)
```