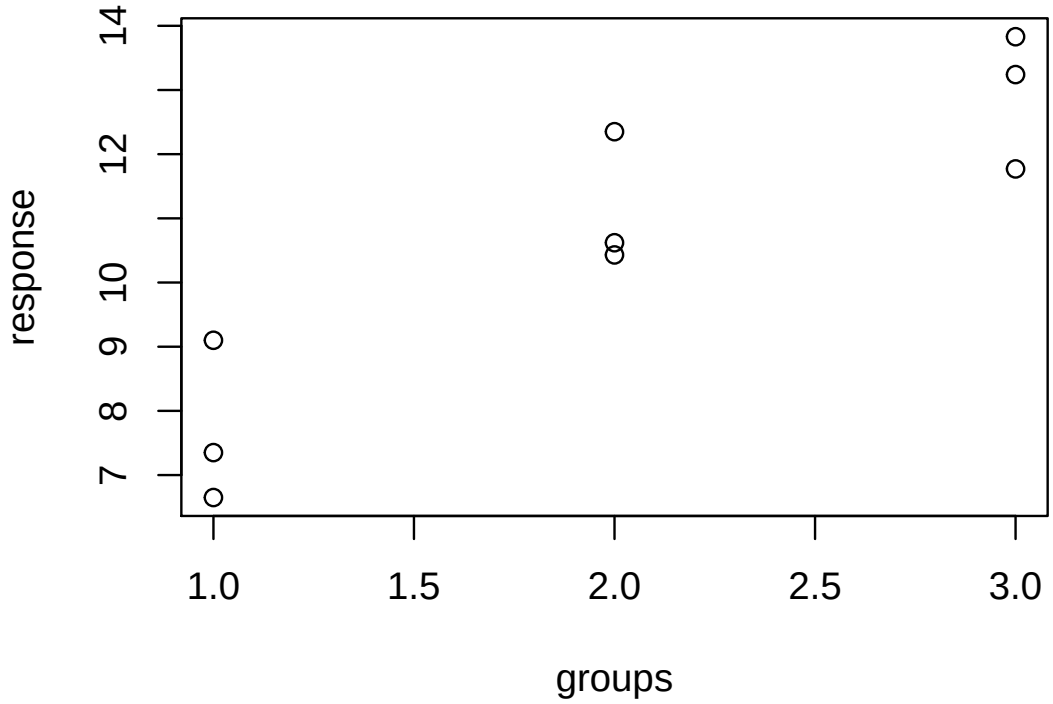
# SSE Activity In Class $1 - 30$

```
##   groups response
## 1      1     7.35
## 2      1      9.1
## 3      1     6.65
## 4      2    10.43
## 5      2    10.62
## 6      2    12.35
## 7      3    13.24
## 8      3    11.77
## 9      3    13.83
```




```
##   .group   min   Q1 median    Q3  max mean   sd n missing
## 1      1  6.65  7.0   7.35  8.22  9.1  7.7 1.26 3       0
## 2      2 10.43 10.5  10.62 11.48 12.3 11.1 1.06 3       0
## 3      3 11.77 12.5  13.24 13.54 13.8 12.9 1.06 3       0
```

1. First, we will calculate the sum of squared errors for the single mean model.
   (a) Start by drawing a line at the grand mean on the plot above (you will also need to calculate the grand mean).
   (b) Now calculate the residual error for every point on the graph. You will need to use some of the data shown in the output above. Remember $e_{ij} = y_{ij} - \bar{\bar{y}}$
   (c) Now square each error and add them up. This is your SSE for the single mean model
2. Now, find the sum of squared errors for the separate means model
   (a) Start by drawing a short horizontal line at each of the group averages on the plot above.
   (b) Now calculate the residual error for every point on the graph. Remember $e_{ij} = y_{ij} - \bar{y_j}$
   (c) Now square each error and add them up. This is your SSE for the separate means model