INTRODUCTION TO R

Multiple Plots

Graphics so far

- Plot single source of data
- No combinations of plots
- No different layers

shop

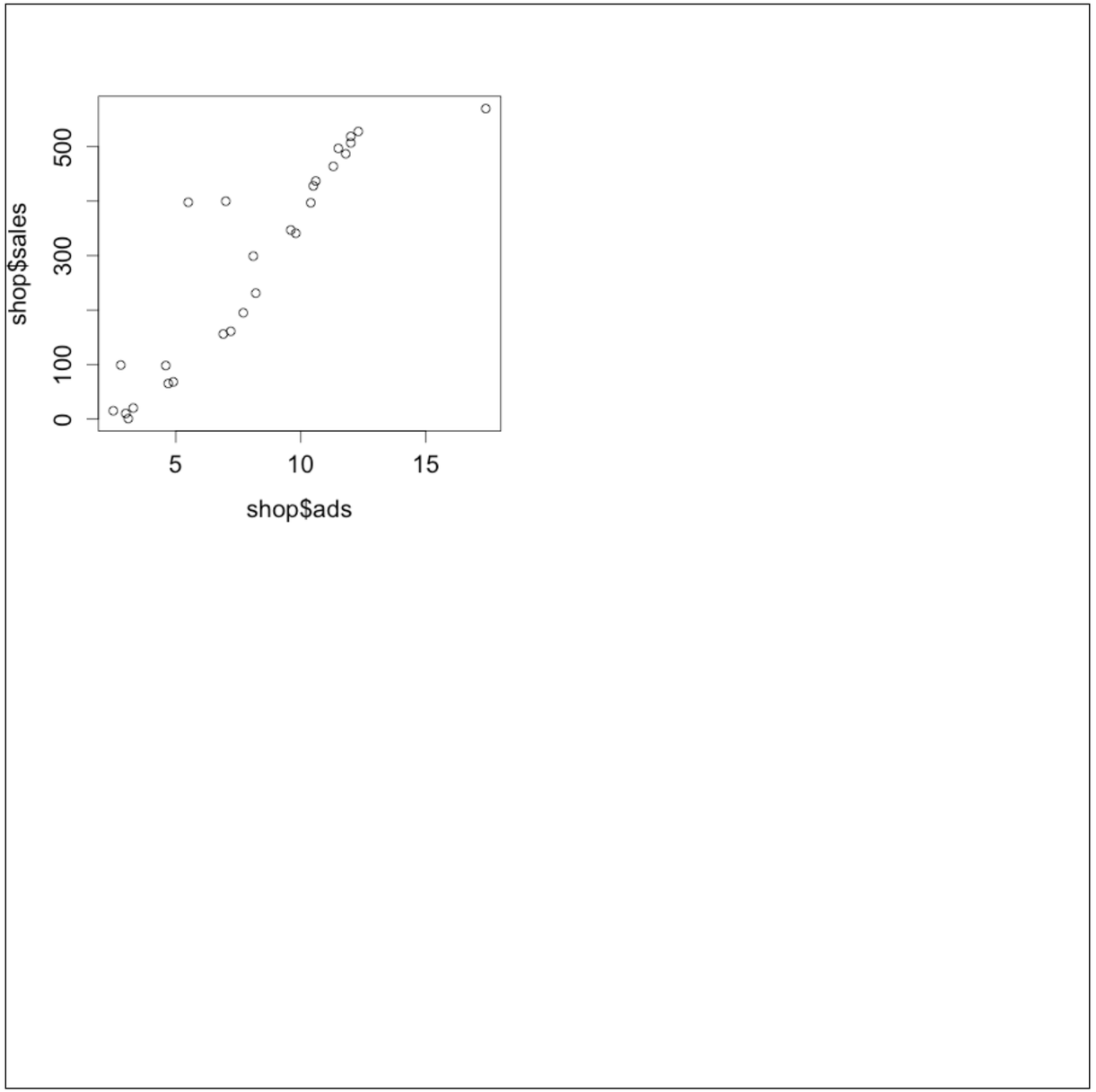
```
> str(shop)
'data.frame': 27 obs. of  5 variables:
 $ sales    : num  231 156 10 519 437 487 299 195 20 ...
 $ ads      : num  8.2 6.9 3 12 10.6 ...
 $ comp     : int  11 12 15 1 5 4 10 12 15 8 ...
 $ inv      : int  294 232 149 600 567 571 512 347 212 ...
 $ size_dist: num  8.2 4.1 4.3 16.1 14.1 ...
```

`mfrow` parameter in `par()`

```
> par()
List of 72
 $ xlog     : logi FALSE
 $ ylog     : logi FALSE
 $ adj      : num 0.5
 ...
 $ fin      : num [1:2] 8.31 6.89
 $ font     : int 1
 $ font.axis: int 1
 $ font.lab : int 1
 ...
 $ yaxs     : chr "r"
 $ yaxt     : chr "s"
 $ ylbias   : num 0.2
```

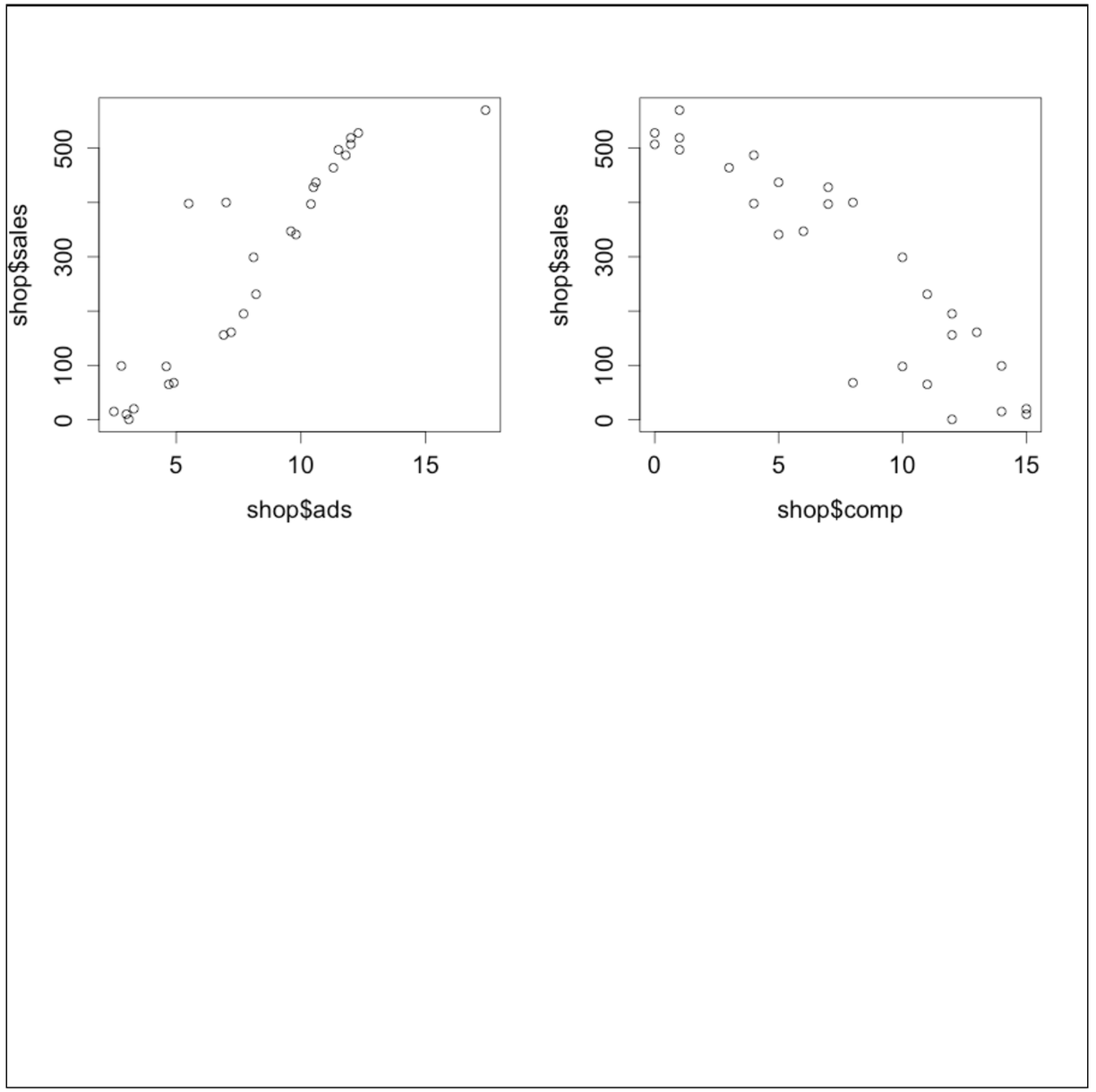
mfrow parameter

```
> par(mfrow = c(2,2))
> plot(shop$ads, shop$sales)
```



mfrow parameter

```
> par(mfrow = c(2,2))
> plot(shop$ads, shop$sales)
> plot(shop$comp, shop$sales)
```



mfrow parameter

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> par(mfrow = c(2,2))
> plot(shop$ads, shop$sales)
> plot(shop$comp, shop$sales)
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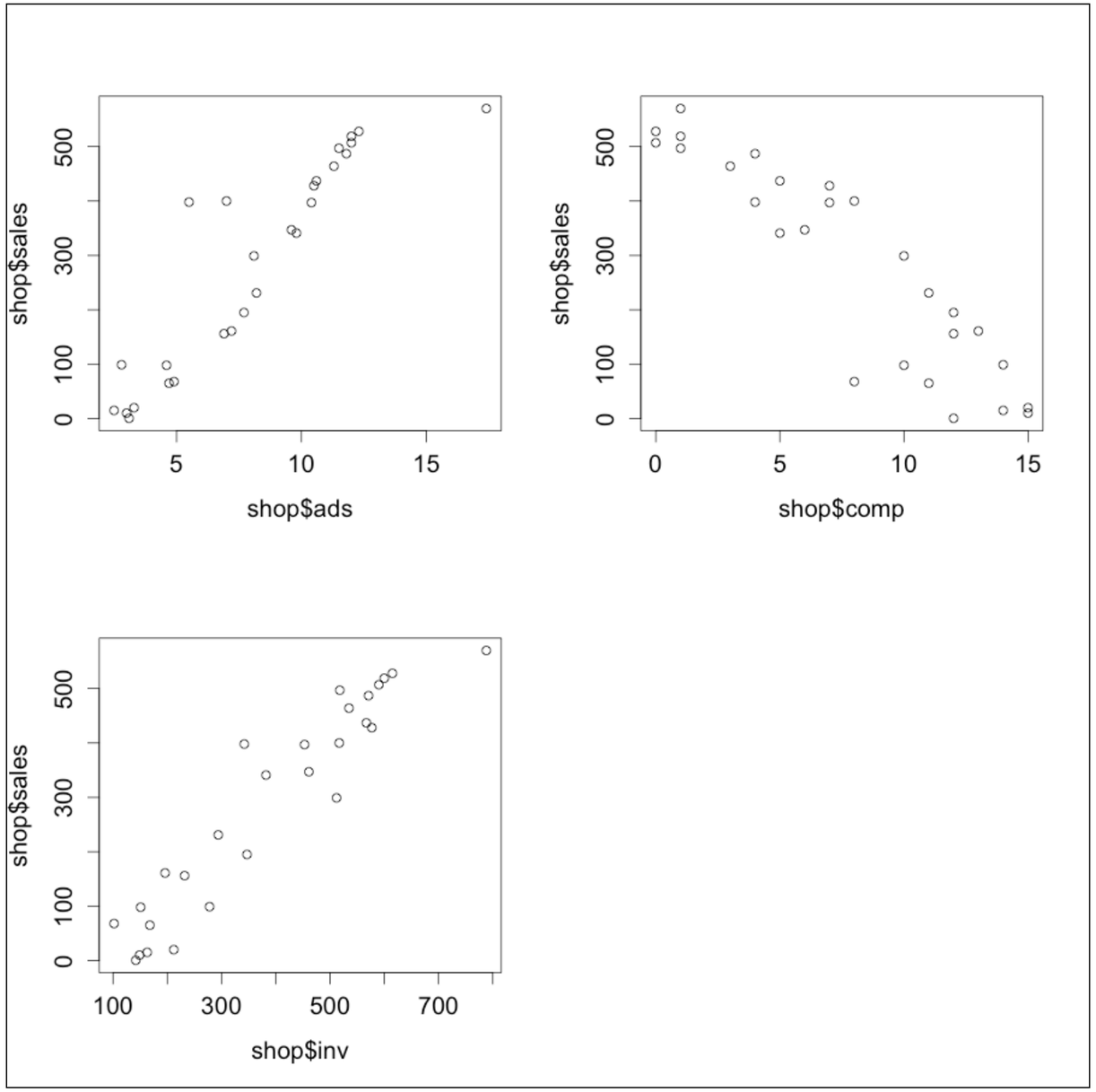
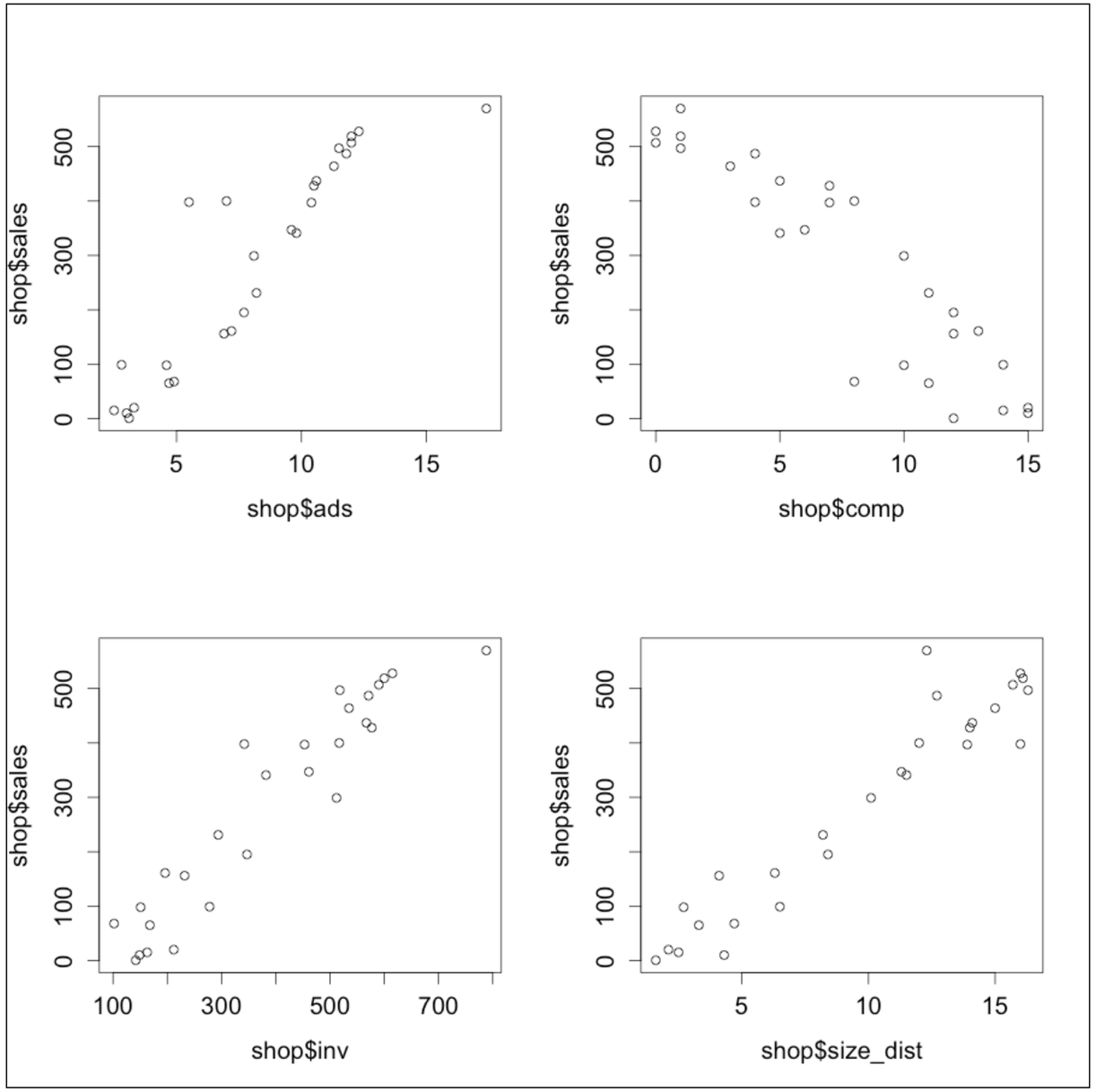


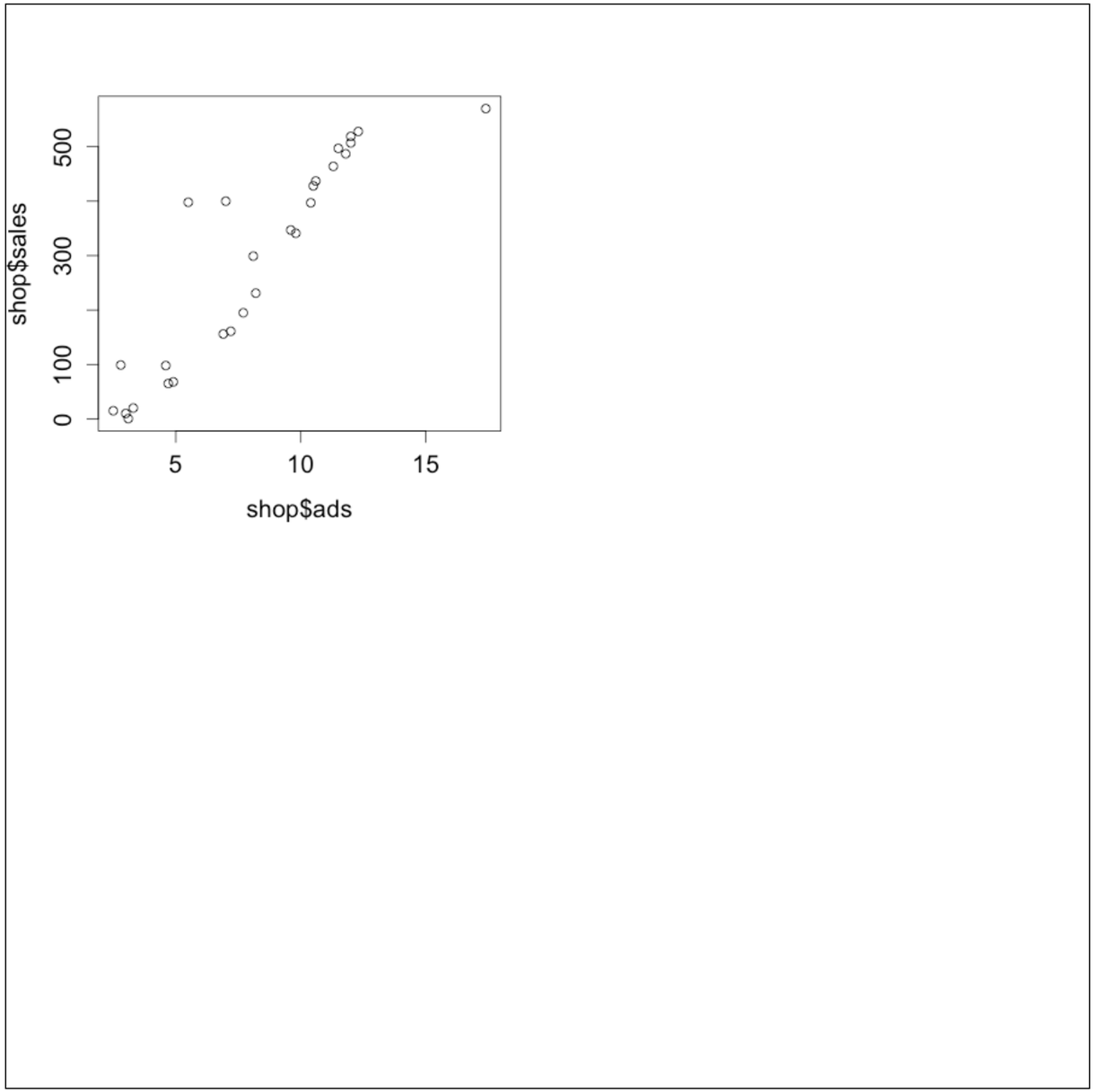
mfrow parameter

```
> par(mfrow = c(2,2))
> plot(shop$ads, shop$sales)
> plot(shop$comp, shop$sales)
> plot(shop$inv, shop$sales)
> plot(shop$size_dist, shop$sales)
```



mfcol parameter

```
> par(mfcol = c(2,2))
> plot(shop$ads, shop$sales)
```



mfcol parameter

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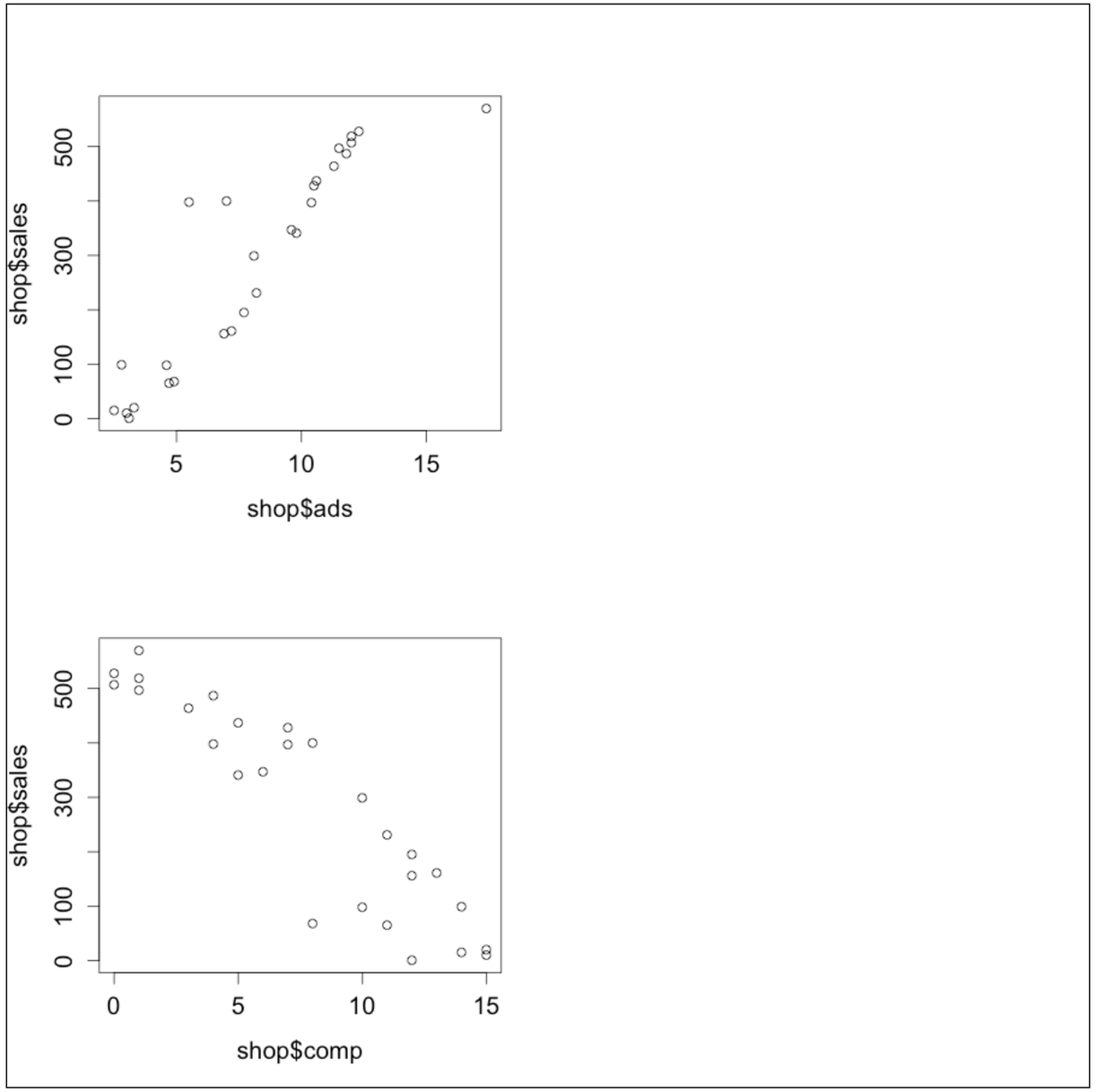
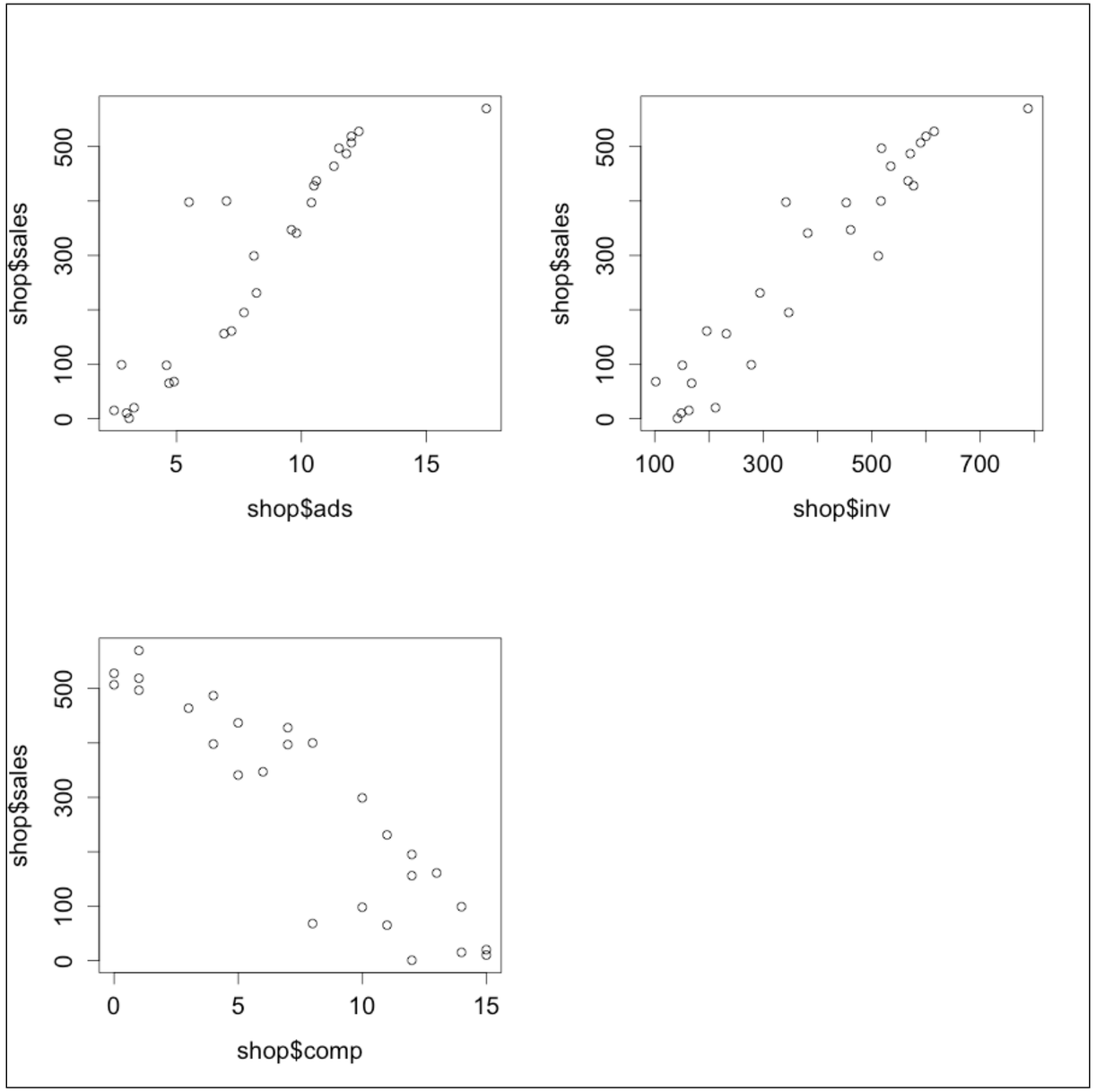
> plot(shop$ads, shop$sales)
> plot(shop$comp, shop$sales)
```



mfcol parameter

```
> par(mfcol = c(2,2))
> plot(shop$ads, shop$sales)
> plot(shop$comp, shop$sales)
> plot(shop$inv, shop$sales)
```

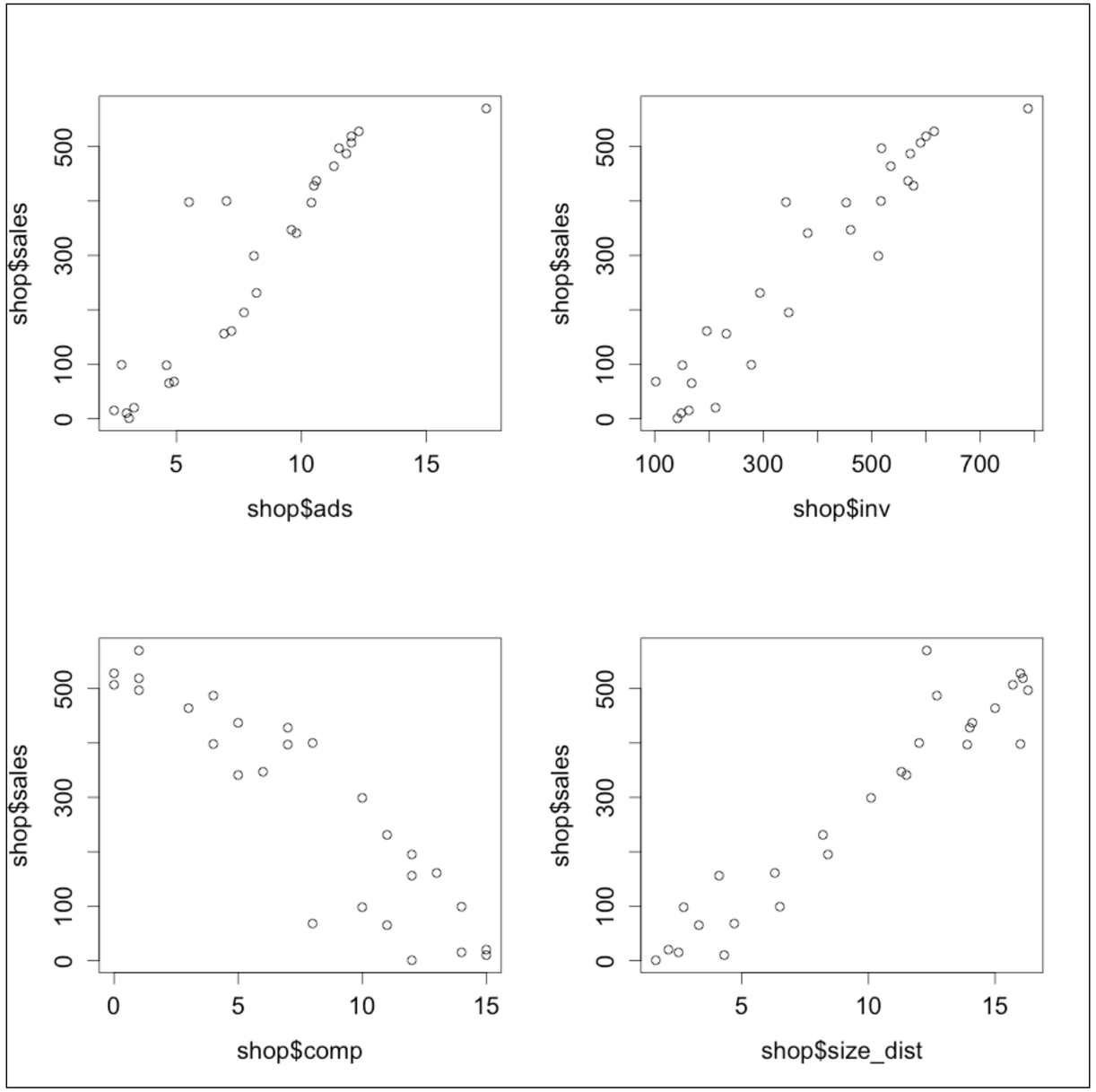


mfcol parameter

```
> par(mfcol = c(2,2))
> plot(shop$ads, shop$sales)
> plot(shop$comp, shop$sales)
> plot(shop$inv, shop$sales)
> plot(shop$size_dist, shop$sales)
```

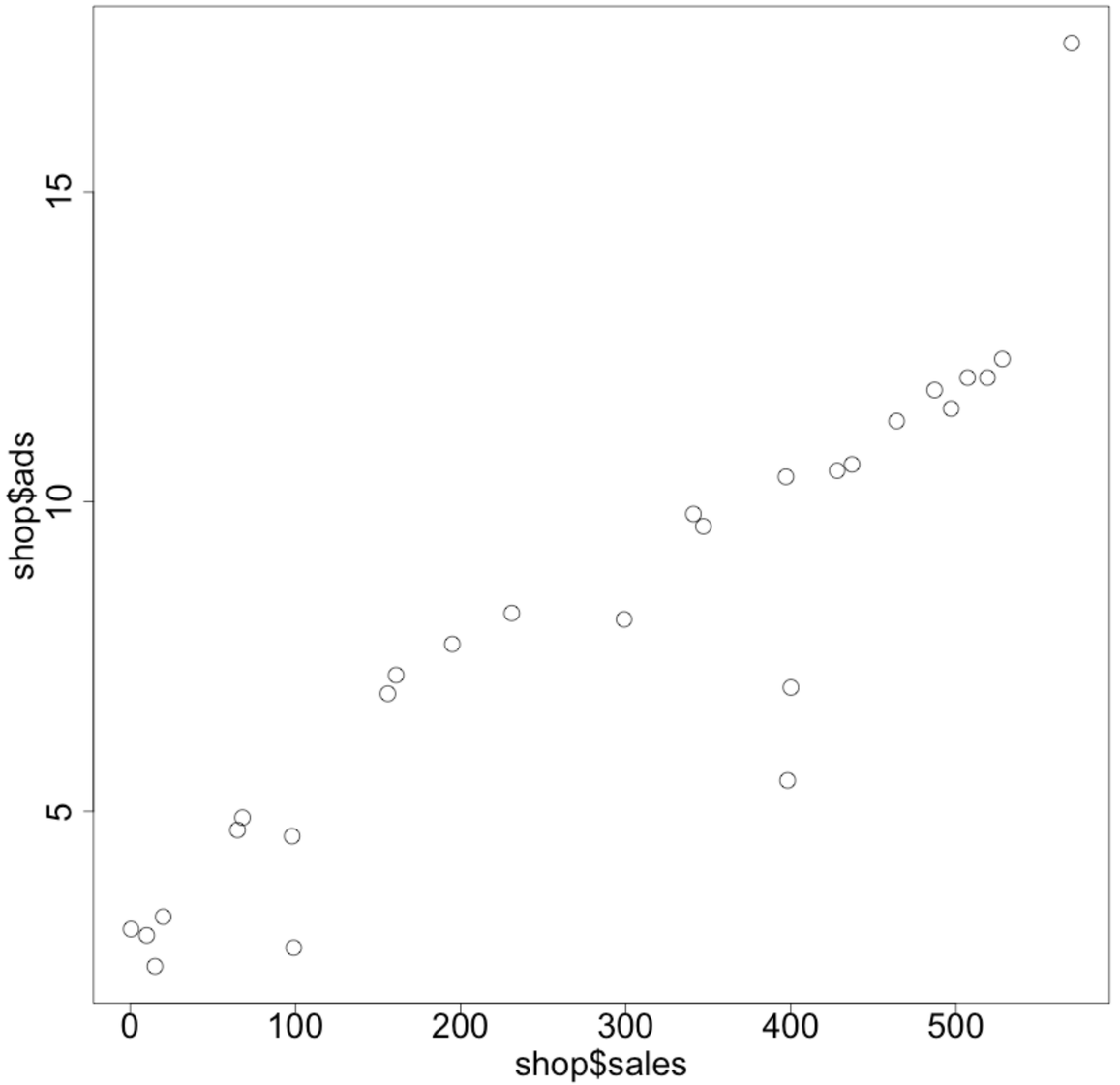
2 rows 2 cols

```
par(mfcol = c(2,2))
```



Reset the grid

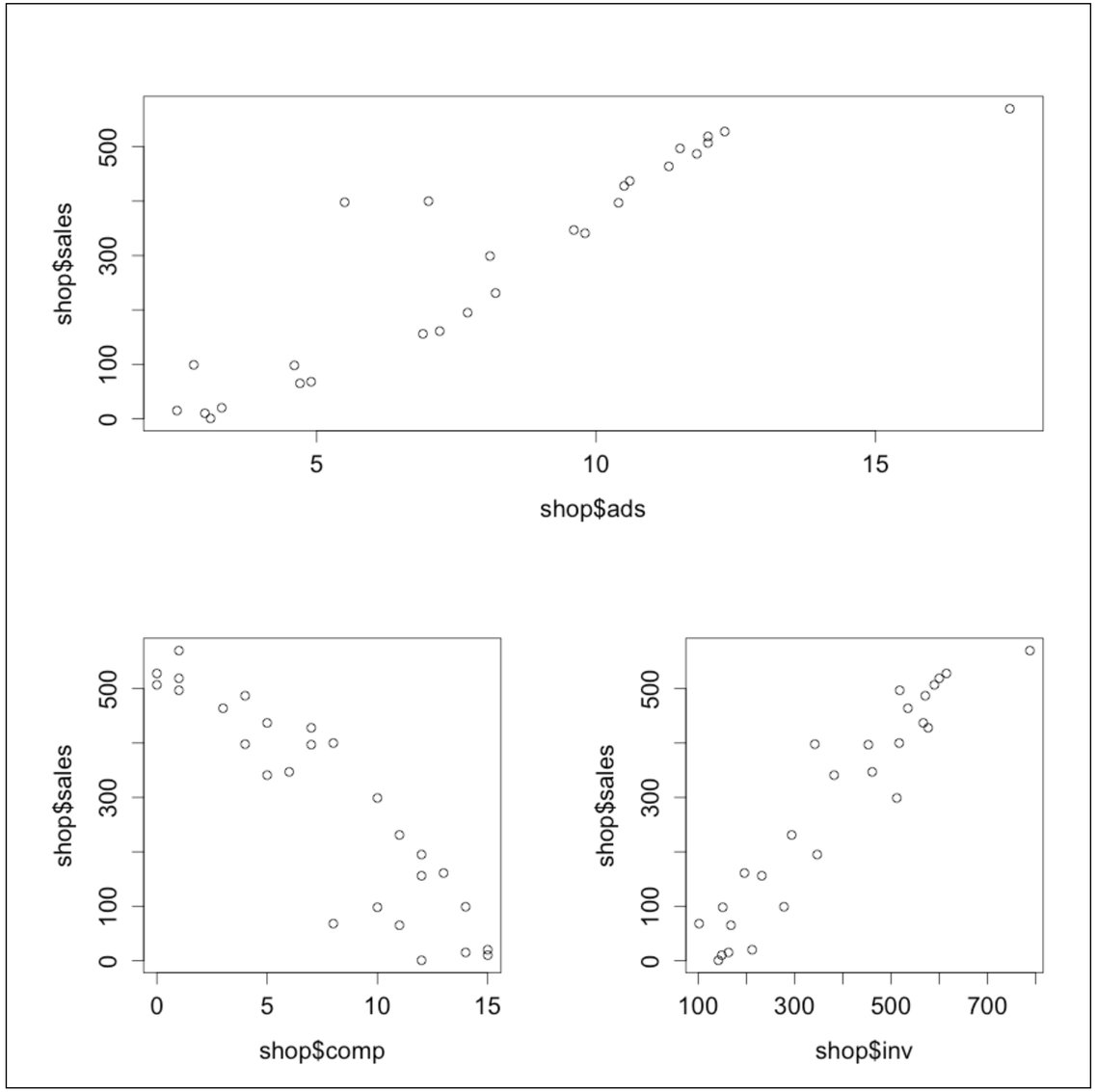
```
> par(mfrow = c(1,1))
> plot(shop$sales, shop$ads)
```



layout()

```
> grid <- matrix(c(1, 1, 2, 3), nrow = 2,
                 ncol = 2, byrow = TRUE)
> grid
     [,1] [,2]
[1,]    1    1
[2,]    2    3

> layout(grid)
> plot(shop$ads, shop$sales)
> plot(shop$comp, shop$sales)
> plot(shop$inv, shop$sales)
```



Reset the grid

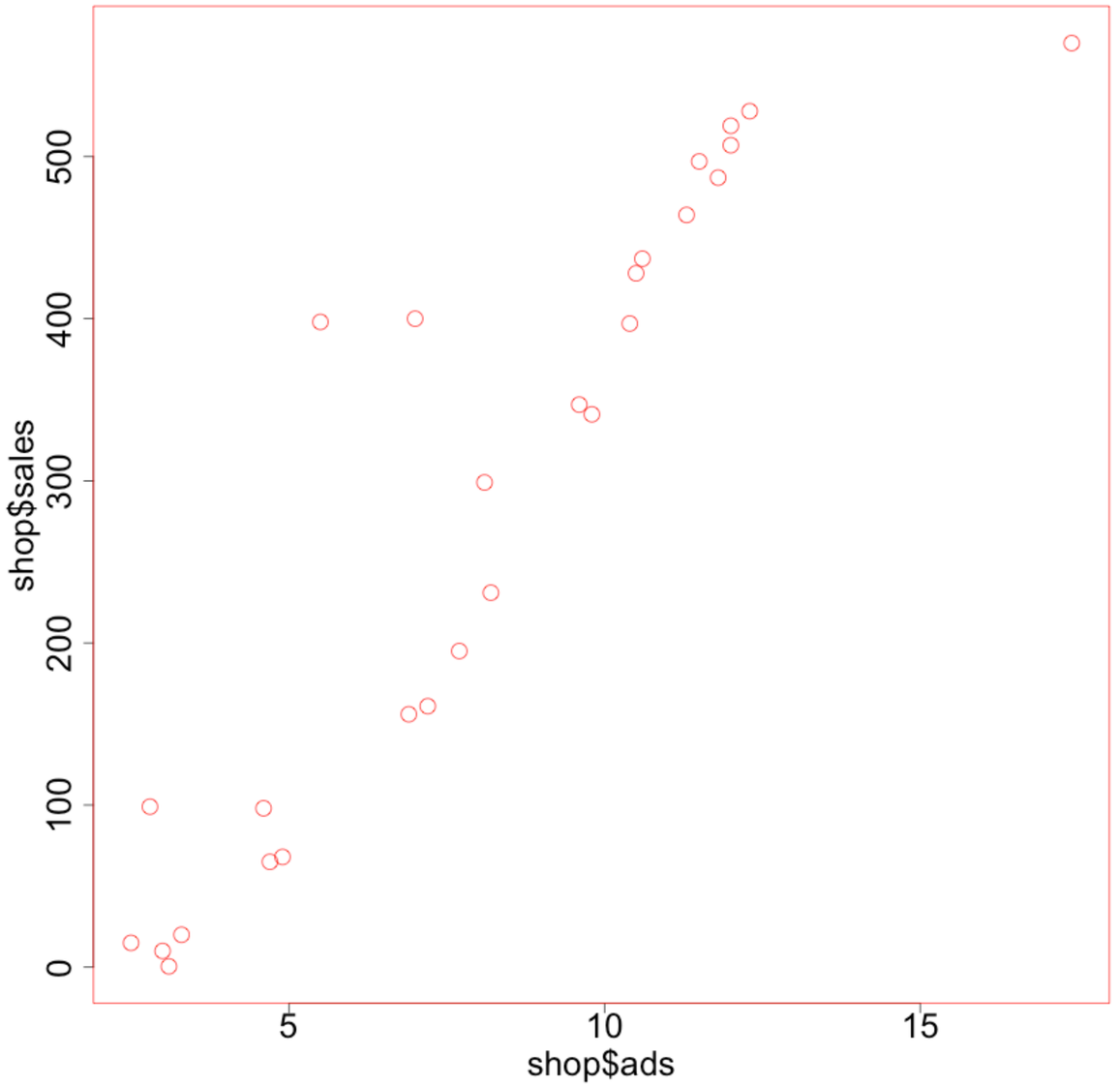
```
> layout(1)
> par(mfcol = c(1,1))
```

Reset all parameters

```
> old_par <- par()

> par(col = "red")

> plot(shop$ads, shop$sales)
```



Reset all parameters

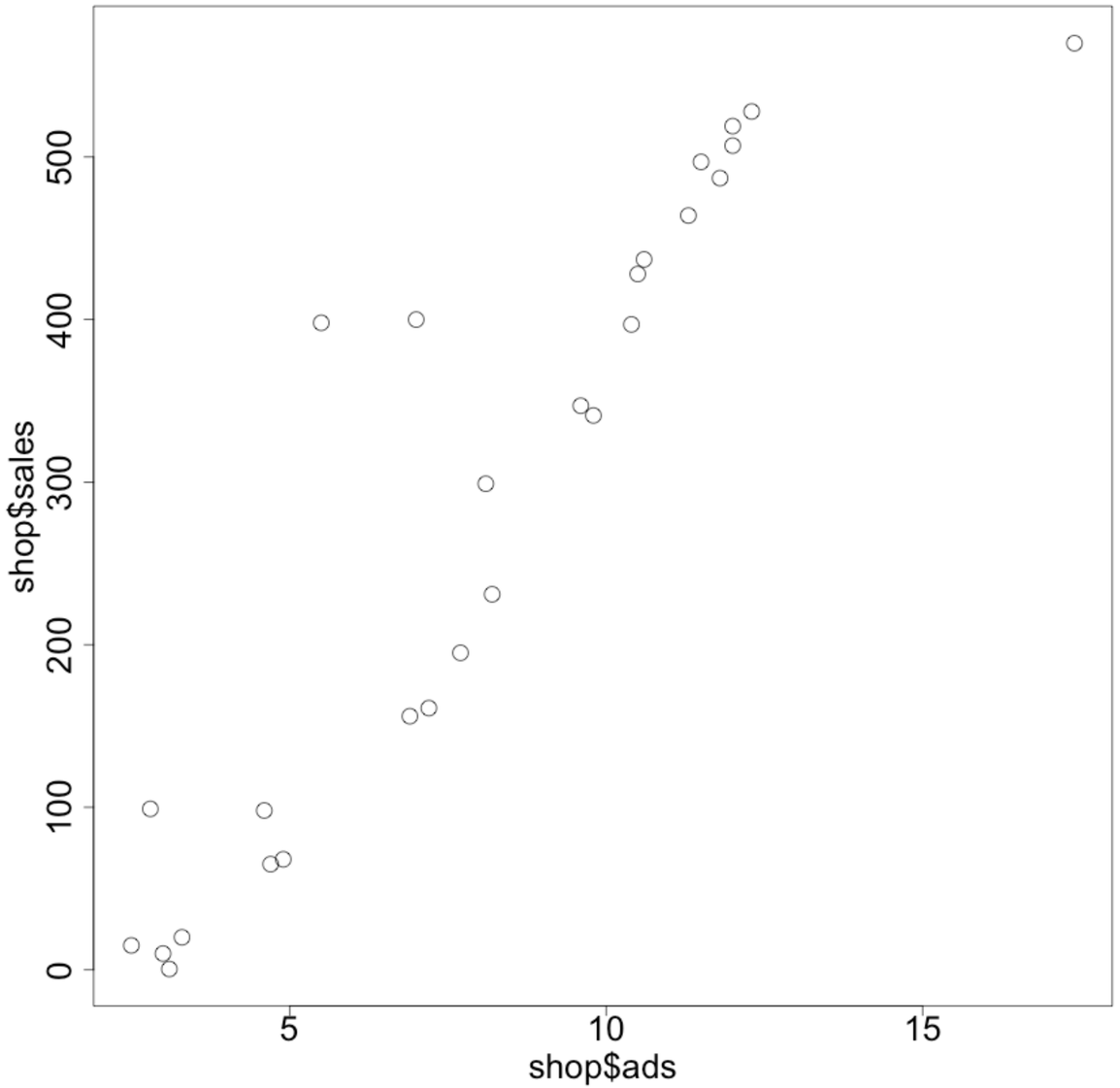
```
> old_par <- par()

> par(col = "red")

> plot(shop$ads, shop$sales)

> par(old_par)

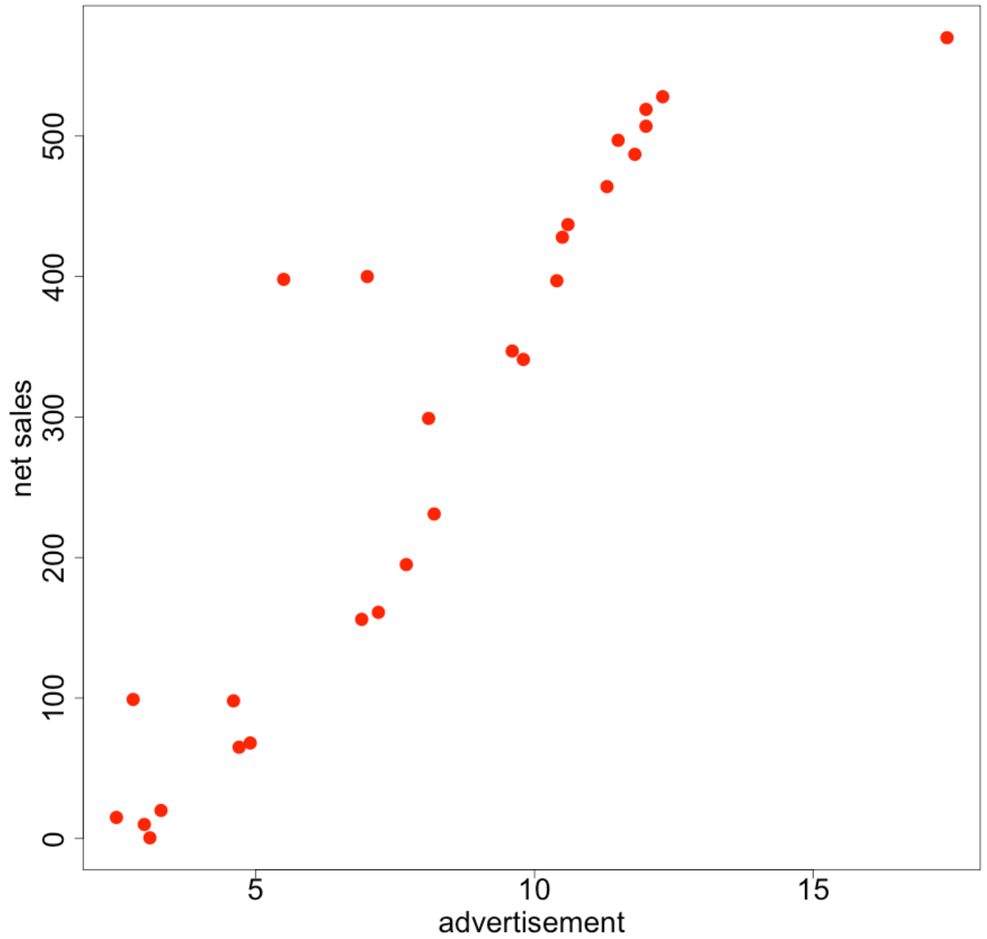
> plot(shop$ads, shop$sales)
```



Stack graphical elements

```
> plot(shop$ads, shop$sales,
       pch = 16, col = 2,
       xlab = "advertisement",
       ylab = "net sales")

> lm_sales <- lm(shop$sales ~ shop$ads)
```

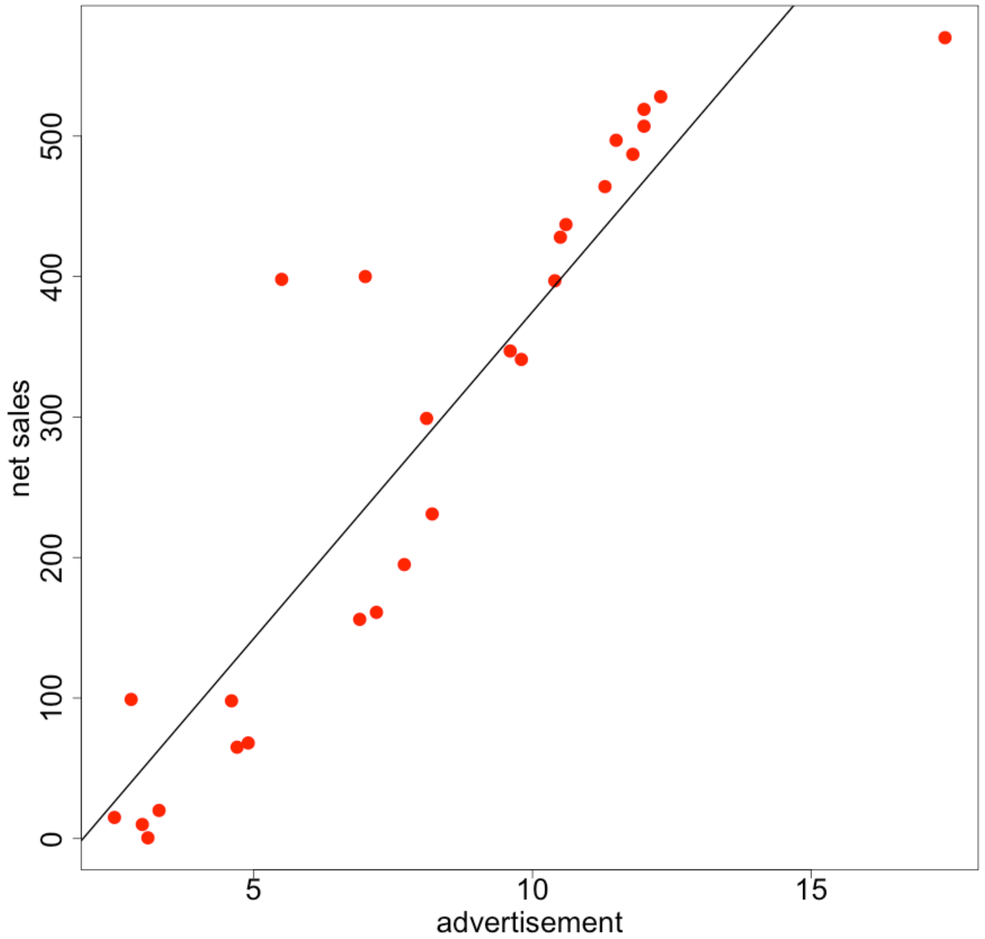


Stack graphical elements

```
> plot(shop$ads, shop$sales,
       pch = 16, col = 2,
       xlab = "advertisement",
       ylab = "net sales")

> lm_sales <- lm(shop$sales ~ shop$ads)

> abline(coef(lm_sales), lwd = 2)
```



Stack graphical elements

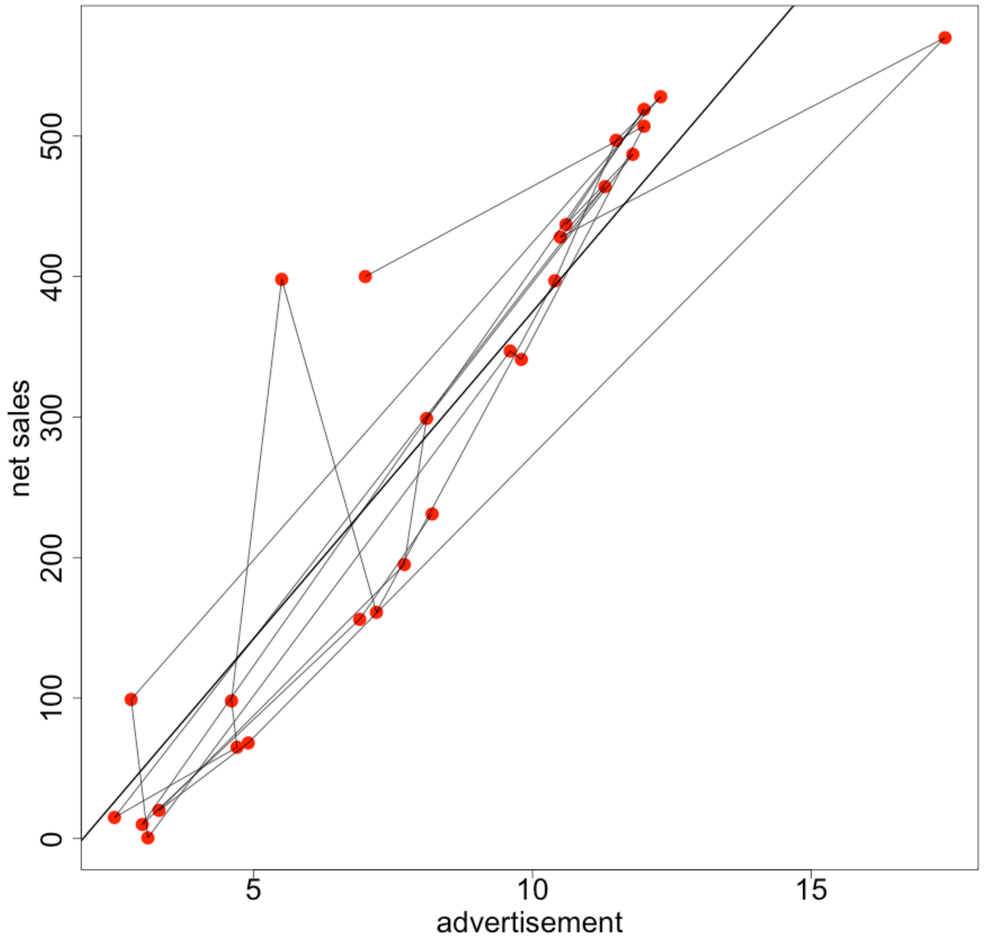
```
> plot(shop$ads, shop$sales,
       pch = 16, col = 2,
       xlab = "advertisement",
       ylab = "net sales")

> lm_sales <- lm(shop$sales ~ shop$ads)

> abline(coef(lm_sales), lwd = 2)

> lines(shop$ads, shop$sales)
```

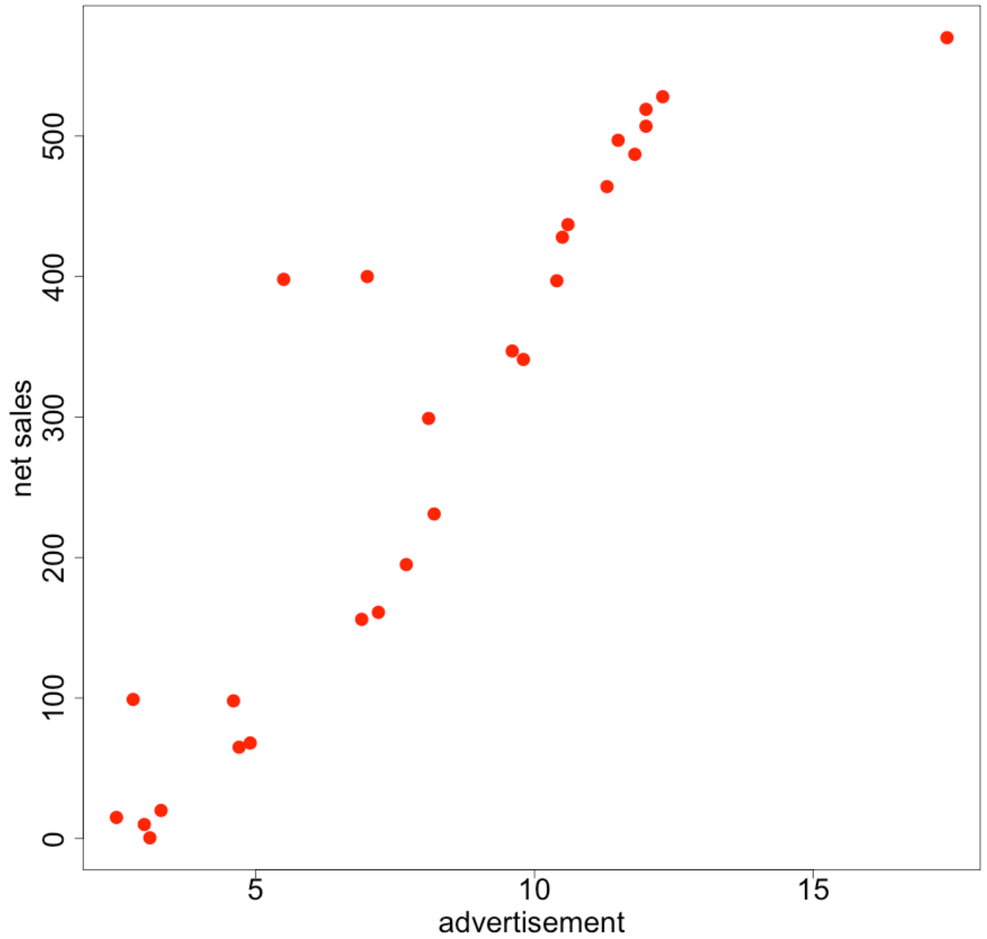
```
points()    segments()
lines()     text()
```



Stack graphical elements

```
> ranks <- order(shop$ads)

> plot(shop$ads, shop$sales,
       pch = 16, col = 2,
       xlab = "advertisement",
       ylab = "net sales")
```

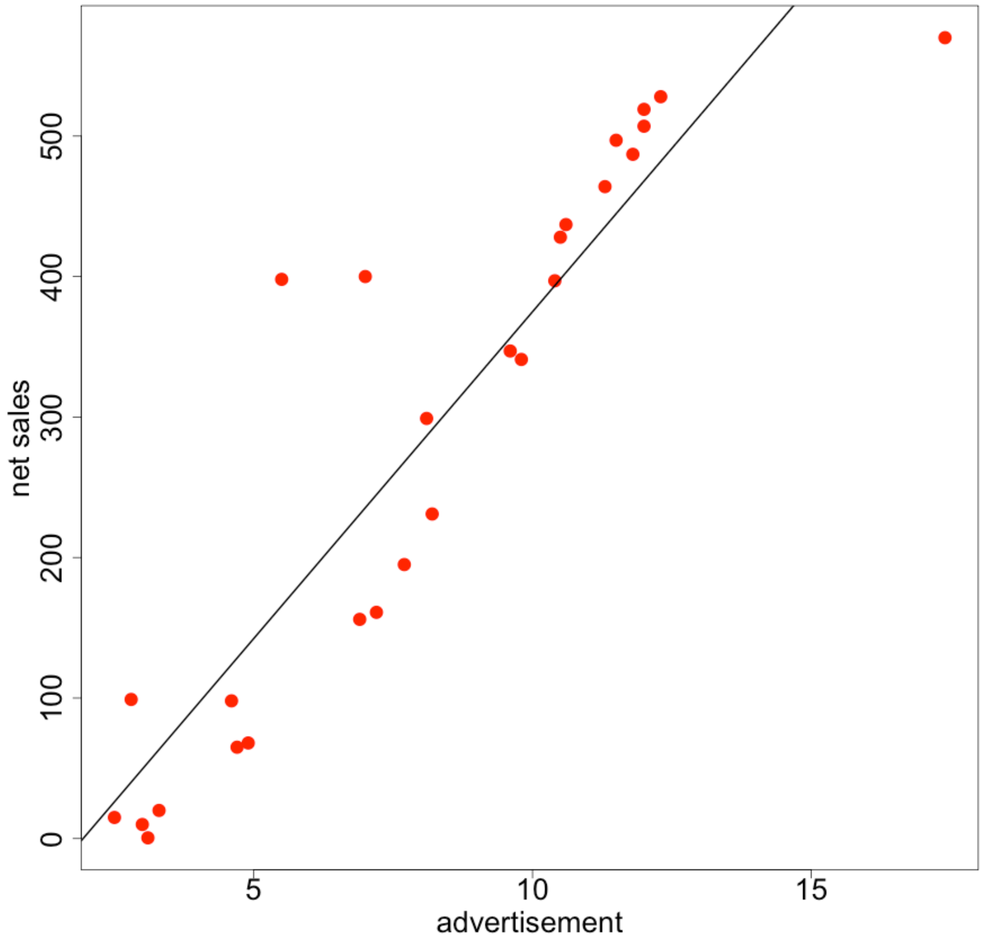


Stack graphical elements

```
> ranks <- order(shop$ads)

> plot(shop$ads, shop$sales,
       pch = 16, col = 2,
       xlab = "advertisement",
       ylab = "net sales")

> abline(coef(lm_sales), lwd = 2)
```



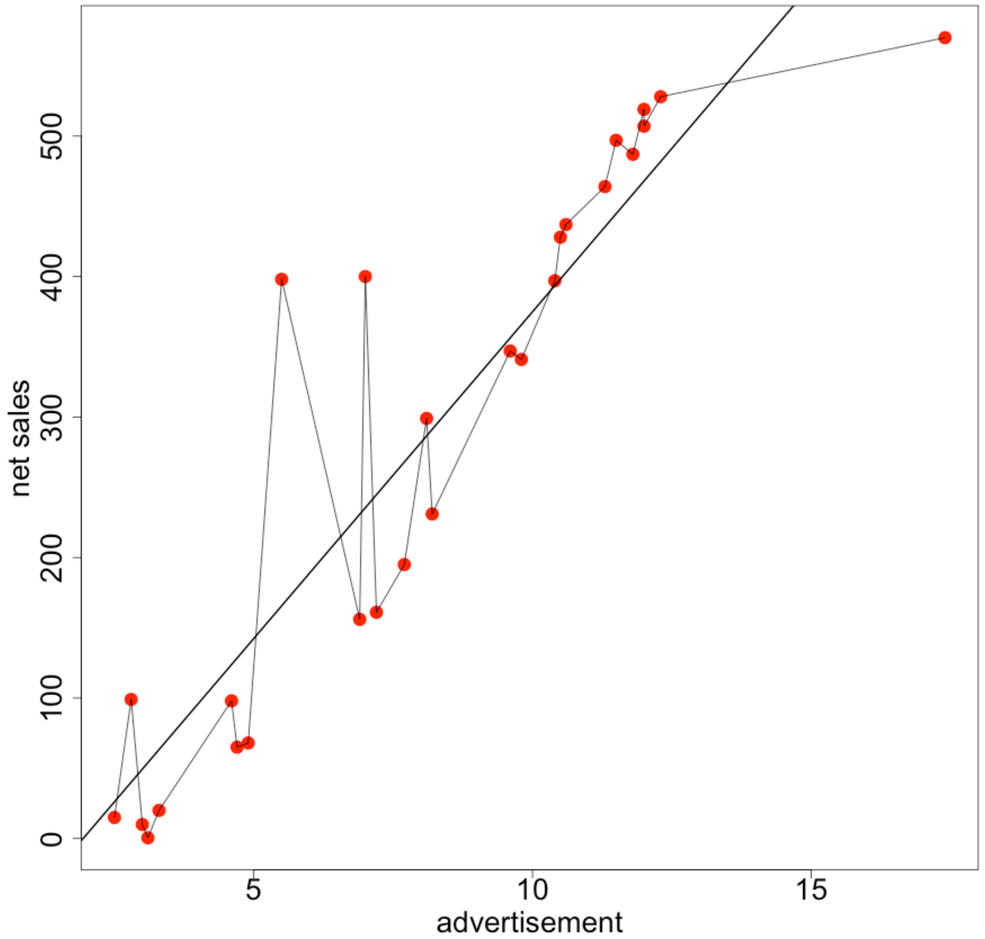
Stack graphical elements

```
> ranks <- order(shop$ads)

> plot(shop$ads, shop$sales,
       pch = 16, col = 2,
       xlab = "advertisement",
       ylab = "net sales")

> abline(coef(lm_sales), lwd = 2)

> lines(shop$ads[ranks], shop$sales[ranks])
```



INTRODUCTION TO R

Let’s practice!