

## Sesion 4.5

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### Graficos

```
pacman::p_load(ggplot2)
```

### Nueva base datos, mtcars

```
mtcars
```

##	mpg	cyl	disp	hp	drat	wt	qsec	vs	am	gear	carb
## Mazda RX4	21.0	6	160.0	110	3.90	2.620	16.46	0	1	4	4
## Mazda RX4 Wag	21.0	6	160.0	110	3.90	2.875	17.02	0	1	4	4
## Datsun 710	22.8	4	108.0	93	3.85	2.320	18.61	1	1	4	1
## Hornet 4 Drive	21.4	6	258.0	110	3.08	3.215	19.44	1	0	3	1
## Hornet Sportabout	18.7	8	360.0	175	3.15	3.440	17.02	0	0	3	2
## Valiant	18.1	6	225.0	105	2.76	3.460	20.22	1	0	3	1
## Duster 360	14.3	8	360.0	245	3.21	3.570	15.84	0	0	3	4
## Merc 240D	24.4	4	146.7	62	3.69	3.190	20.00	1	0	4	2
## Merc 230	22.8	4	140.8	95	3.92	3.150	22.90	1	0	4	2
## Merc 280	19.2	6	167.6	123	3.92	3.440	18.30	1	0	4	4
## Merc 280C	17.8	6	167.6	123	3.92	3.440	18.90	1	0	4	4
## Merc 450SE	16.4	8	275.8	180	3.07	4.070	17.40	0	0	3	3
## Merc 450SL	17.3	8	275.8	180	3.07	3.730	17.60	0	0	3	3
## Merc 450SLC	15.2	8	275.8	180	3.07	3.780	18.00	0	0	3	3
## Cadillac Fleetwood	10.4	8	472.0	205	2.93	5.250	17.98	0	0	3	4
## Lincoln Continental	10.4	8	460.0	215	3.00	5.424	17.82	0	0	3	4
## Chrysler Imperial	14.7	8	440.0	230	3.23	5.345	17.42	0	0	3	4
## Fiat 128	32.4	4	78.7	66	4.08	2.200	19.47	1	1	4	1
## Honda Civic	30.4	4	75.7	52	4.93	1.615	18.52	1	1	4	2
## Toyota Corolla	33.9	4	71.1	65	4.22	1.835	19.90	1	1	4	1
## Toyota Corona	21.5	4	120.1	97	3.70	2.465	20.01	1	0	3	1
## Dodge Challenger	15.5	8	318.0	150	2.76	3.520	16.87	0	0	3	2
## AMC Javelin	15.2	8	304.0	150	3.15	3.435	17.30	0	0	3	2
## Camaro Z28	13.3	8	350.0	245	3.73	3.840	15.41	0	0	3	4
## Pontiac Firebird	19.2	8	400.0	175	3.08	3.845	17.05	0	0	3	2
## Fiat X1-9	27.3	4	79.0	66	4.08	1.935	18.90	1	1	4	1
## Porsche 914-2	26.0	4	120.3	91	4.43	2.140	16.70	0	1	5	2
## Lotus Europa	30.4	4	95.1	113	3.77	1.513	16.90	1	1	5	2

```
## Ford Pantera L      15.8   8 351.0 264 4.22 3.170 14.50 0 1   5   4
## Ferrari Dino        19.7   6 145.0 175 3.62 2.770 15.50 0 1   5   6
## Maserati Bora       15.0   8 301.0 335 3.54 3.570 14.60 0 1   5   8
## Volvo 142E         21.4   4 121.0 109 4.11 2.780 18.60 1 1   4   2
```

```
?mtcars
```

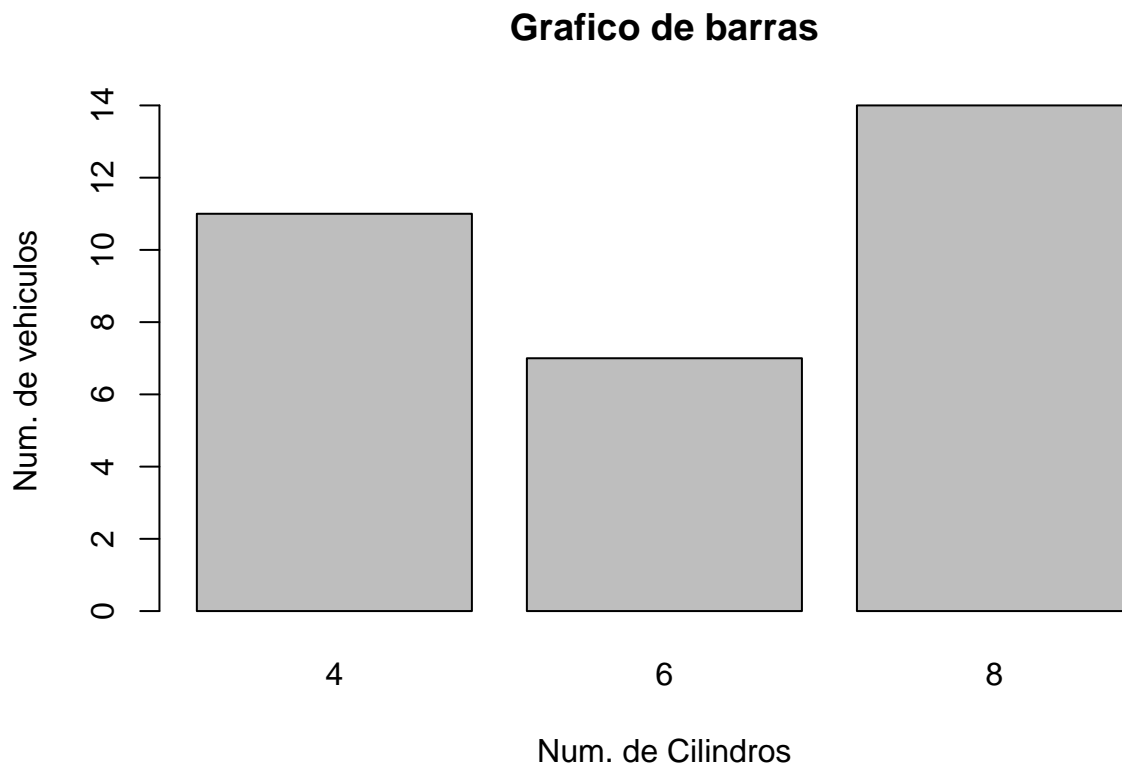
```
## starting httpd help server ... done
```

## Graficas por defecto de R

```
barplot()
```

```
cylfactor <- table(mtcars$cyl)

barplot(cylfactor,
        main = "Grafico de barras",
        xlab = "Num. de Cilindros",
        ylab = "Num. de vehiculos")
```

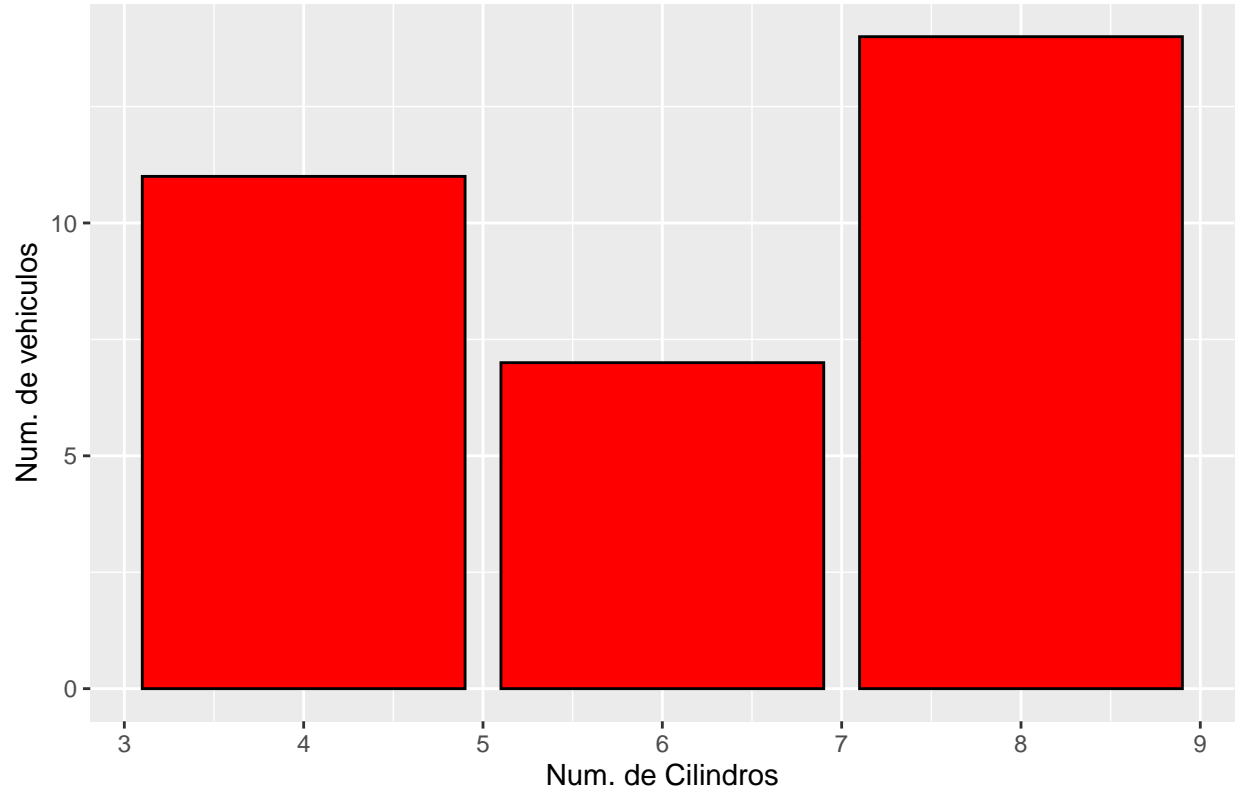


## Graficos con ggplot

```
qplot()
```

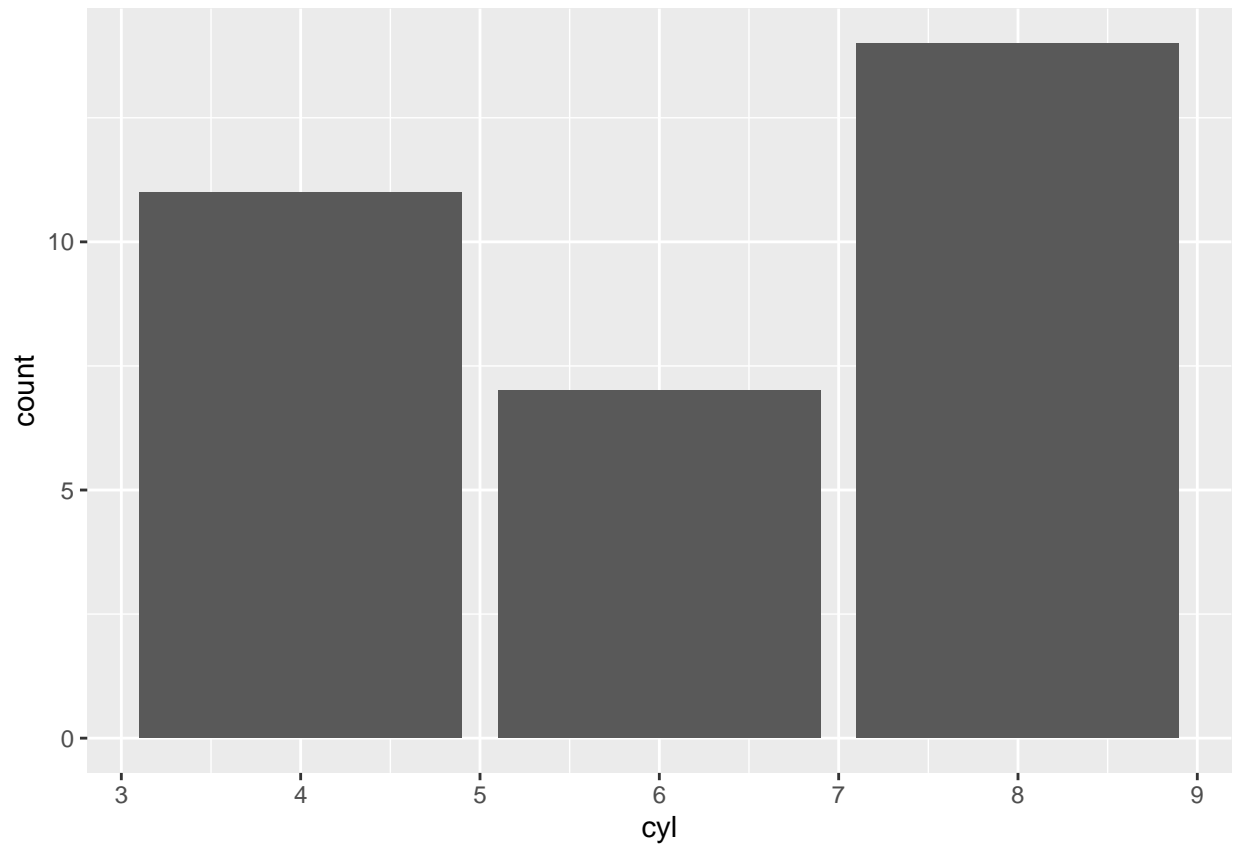
```
qplot(mtcars$cyl,
      main = "Grafico de barras",
      xlab = "Num. de Cilindros",
      ylab = "Num. de vehiculos",
      geom = "bar",
      color = I("black"),
      fill = I("Red"))
```

Grafico de barras

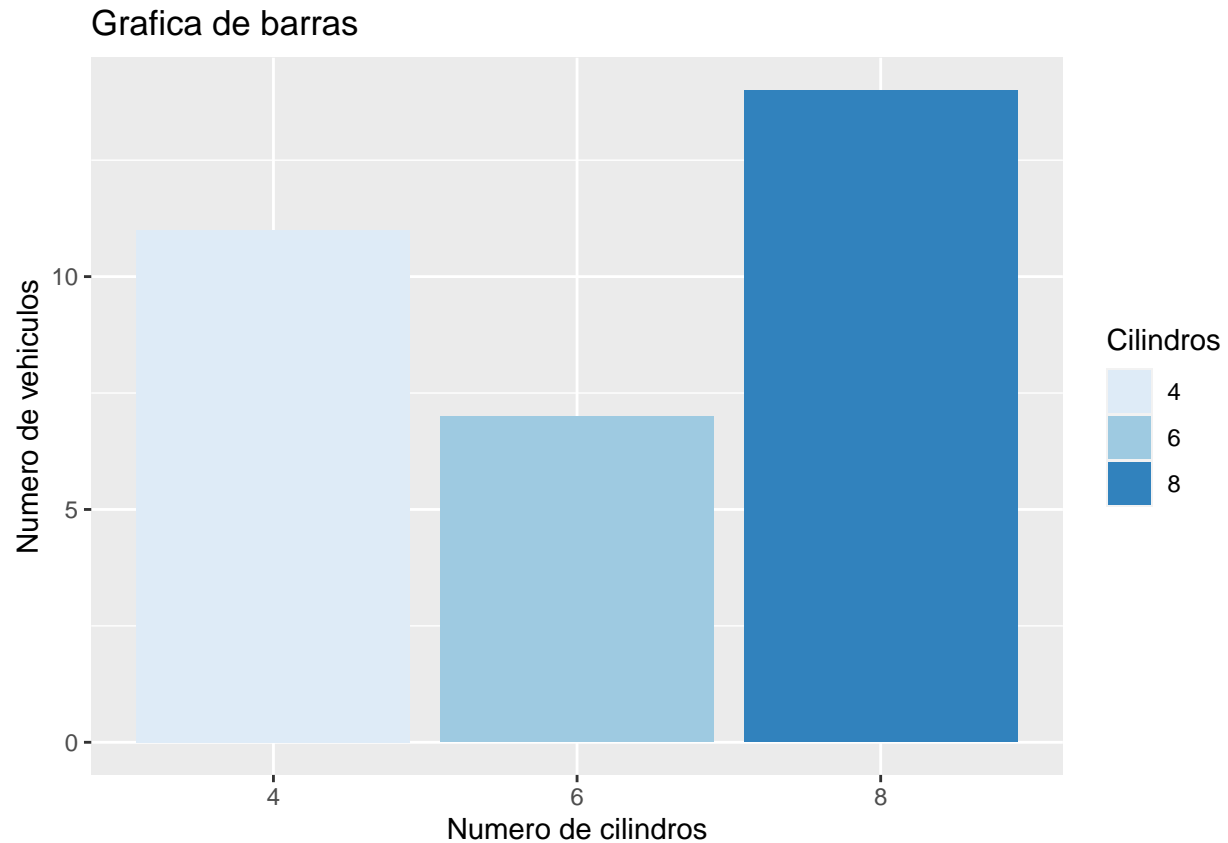


Graficas con ggplot()

```
ggplot(mtcars, aes(cyl)) + geom_bar()
```



```
ggplot(mtcars, aes(x=as.factor(cyl))) + geom_bar(aes(fill=as.factor(cyl))) + scale_fill_brewer(name = "cyl")
```



## Recursos adicionales

### Cheat Sheet de ggplot2

<https://github.com/rstudio/cheatsheets/blob/master/data-visualization-2.1.pdf>

### Modificar etiquetas de las graficas

<https://www.datanovia.com/en/blog/ggplot-legend-title-position-and-labels/>

### R for Data Science (GGplot2)

[https://rstudio-pubs-static.s3.amazonaws.com/318832\\_e8443ac15f704debacd04107ae000e17.html#barplot](https://rstudio-pubs-static.s3.amazonaws.com/318832_e8443ac15f704debacd04107ae000e17.html#barplot)

### ggplot2 Quick Reference: colour (and fill)

<http://sape.inf.usi.ch/quick-reference/ggplot2/colour>

### R Graphics Essentials for Great Data Visualization: +200 Practical

<https://www.amazon.com.mx/Graphics-Essentials-Great-Data-Visualization-ebook/dp/B077H23KVK>