Medias en matematicas

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Medias

```
x = c( 32,45,67,43,28,17,48,95 )
n = length(x)
```

Vamos a calcular las medias del valor 32, 45, 67, 43, 28, 17, 48, 95 que esta formado por 8 observaciones

Media aritmetica

$$\bar{x} = \frac{1}{n}\sum_{i=1}^{n} x_i$$

```
sum(x)/n
```

```
## [1] 46.875
```

Media aritmetica ponderada

Otorgar pesos a los datos dependiendo de su relevancia.

$$\bar{x}_w = \frac{\sum_{i=1}^{n} w_i \cdot x_i}{\sum_{i=1}^{n} w_i}$$

```
# Pesos
w = c(1,2,2,3,3,2,2,1)

sum(w*x)/sum(w)
```

```
## [1] 43.375
```

Media geometrica

$$\bar{x}_G = \left(\prod_{i=1}^{n} x_i\right)^{1} 1/n$$

```
prod(x)^(1/n)
```

```
## [1] 41.62073
```

```
prod(x^(1/n))
```

```
## [1] 41.62073
```

Media armonica

$$\bar{x}_A = \frac{n}{\sum_{i=1}^{n} \frac{1}{x_i}}$$

```
n/sum(1/x)
```

```
## [1] 36.77301
```