

## Pie Charts

### Description

Draw a pie chart.

### Usage

```
pie(x, labels = names(x), edges = 200, radius = 0.8,  
    density = NULL, angle = 45, col = NULL, border =  
NULL,  
    lty = NULL, main = NULL, ...)
```

### Arguments

**x**

a vector of positive quantities. The values in **x** are displayed as the areas of pie slices.

**labels**

a vector of character strings giving names for the slices. For empty or NA labels, no pointing line is drawn either.

**edges**

the circular outline of the pie is approximated by a polygon with this many edges.

**radius**

the pie is drawn centered in a square box whose sides range from  $-1$  to  $1$ . If the character strings labeling the slices are long it may be necessary to use a smaller radius.

**density**

the density of shading lines, in lines per inch. The default value of `NULL` means that no shading lines are drawn. Non-positive values of **density** also inhibit the drawing of shading lines.

**angle**

the slope of shading lines, given as an angle in degrees (counter-

clockwise).

`col`

a vector of colors to be used in filling or shading the slices. If missing a set of 6 pastel colours is used, unless `density` is specified when

`par("fg")` is used.

`border`, `lty`

(possibly vectors) arguments passed to `polygon` which draws each slice.

`main`

an overall title for the plot.

...

graphical parameters can be given as arguments to `pie`. They will affect the main title and labels only.

### **Note**

Pie charts are a very bad way of displaying information. The eye is good at judging linear measures and bad at judging relative areas. A bar chart or dot chart is a preferable way of displaying this type of data.

Cleveland (1985), page 264: “Data that can be shown by pie charts always can be shown by a dot chart. This means that judgements of position along a common scale can be made instead of the less accurate angle judgements.” This statement is based on the empirical investigations of Cleveland and McGill as well as investigations by perceptual psychologists.

Prior to **R** 1.5.0 this was known as `piechart`, which is the name of a Trellis function, so the name was changed to be compatible with S.

### **References**

Becker, R. A., Chambers, J. M. and Wilks, A. R. (1988) *The New S Language*. Wadsworth & Brooks/Cole.

Cleveland, W. S. (1985) *The elements of graphing data*. Wadsworth: Monterey, CA, USA.

## See Also

[dotchart.](#)

## Examples

```
pie(rep(1, 24), col = rainbow(24), radius = 0.9)

pie.sales <- c(0.12, 0.3, 0.26, 0.16, 0.04, 0.12)
names(pie.sales) <- c("Blueberry", "Cherry",
  "Apple", "Boston Cream", "Other", "Vanilla Cream")
pie(pie.sales) # default colours
pie(pie.sales,
  col = c("purple", "violetred1", "green3",
  "cornsilk", "cyan", "white"))
pie(pie.sales, col = gray(seq(0.4,1.0,length=6)))
pie(pie.sales, density = 10, angle = 15 + 10 * 1:6)

n <- 200
pie(rep(1,n), labels="", col=rainbow(n), border=NA,
  main = "pie(*, labels=\\\"\\\", col=rainbow(n),
border=NA,..")
```