

## 0.1 ternaryplot: Ternary diagram

### Description

Visualizes compositional, 3-dimensional data in an equilateral triangle (from the `vcd` library, Version 0.1-3.3, Date 2004-04-21), using plot graphics. Differs from implementation in `vcd` (0.9-7), which uses grid graphics.

### Usage

```
ternaryplot(x, scale = 1, dimnames = NULL, dimnames.position = c("corner", "edge", "non",  
  dimnames.color = "black", id = NULL, id.color = "black", coordinates = FALSE,  
  grid = TRUE, grid.color = "gray", labels = c("inside", "outside", "none"),  
  labels.color = "darkgray", border = "black", bg = "white", pch = 19, cex = 1,  
  prop.size = FALSE, col = "red", main = "ternary plot", ...)
```

### Arguments

<code>x</code>	a matrix with three columns.
<code>scale</code>	row sums scale to be used.
<code>dimnames</code>	dimension labels (defaults to the column names of <code>x</code> ).
<code>dimnames.position</code> , <code>dimnames.color</code>	position and color of dimension labels.
<code>id</code>	optional labels to be plotted below the plot symbols. <code>coordinates</code> and <code>id</code> are mutual exclusive.
<code>id.color</code>	color of these labels.
<code>coordinates</code>	if <code>TRUE</code> , the coordinates of the points are plotted below them. <code>coordinates</code> and <code>id</code> are mutual exclusive.
<code>grid</code>	if <code>TRUE</code> , a grid is plotted. May optionally be a string indicating the line type (default: <code>"dotted"</code> ).
<code>grid.color</code>	grid color.
<code>labels</code> , <code>labels.color</code>	position and color of the grid labels.
<code>border</code>	color of the triangle border.
<code>bg</code>	triangle background.
<code>pch</code>	plotting character. Defaults to filled dots.
<code>cex</code>	a numerical value giving the amount by which plotting text and symbols should be scaled relative to the default. Ignored for the symbol size if <code>prop.size</code> is not <code>FALSE</code> .

<code>prop.size</code>	if TRUE, the symbol size is plotted proportional to the row sum of the three variables, i.e. represents the weight of the observation.
<code>col</code>	plotting color.
<code>main</code>	main title.
<code>...</code>	additional graphics parameters (see <code>par</code> )

## Details

A points' coordinates are found by computing the gravity center of mass points using the data entries as weights. Thus, the coordinates of a point  $P(a,b,c)$ ,  $a + b + c = 1$ , are:  $P(b + c/2, c * \sqrt{3}/2)$ .

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## References

M. Friendly (2000), *Visualizing Categorical Data*. SAS Institute, Cary, NC.

## See Also

`ternarypoints`

## Examples

```
data(mexico)
if (require(VGAM)) {
  z.out <- zelig(as.factor(vote88) ~ pristr + othcok + othsocok,
                 model = "mlogit", data = mexico)
  x.out <- setx(z.out)
  s.out <- sim(z.out, x = x.out)

  ternaryplot(s.out$qi$ev, pch = ".", col = "blue",
              main = "1988 Mexican Presidential Election")
}
```