

# decksh reference



# *Keywords*

## Structure Text

deck  
edeck  
slide  
eslide  
canvas  
include  
grid  
text  
ctext  
etext  
rtext  
arctext  
textblock  
textfile  
textcode

## Lists

list  
blist  
nlist  
clist  
li  
elist

## Graphics

acircle  
arc  
circle  
curve  
ellipse  
hline  
line  
pill  
polygon  
rect  
rrect  
square  
star  
vline

## Braces Arrows

lbrace  
rbrace  
ubrace  
dbrace  
arrow  
crarrow  
clarrow  
cuarrow  
cdarrow

## Images

image  
cimage

## Charts

dchart  
legend

## Loop

for  
efor

## Assignments

polarx  
polary  
area  
format  
random  
vmap

## Data

data  
edata

# Keywords and arguments

keyword

arguments

mandatory

optional

**text** *"..string...."* x y n

"font" "color" op

text "hello, world" 80 50 2

hello, world

text "hello, world" 80 40 2

"serif"

*hello, world*

text "hello, world" 80 30 2

"serif" "red"

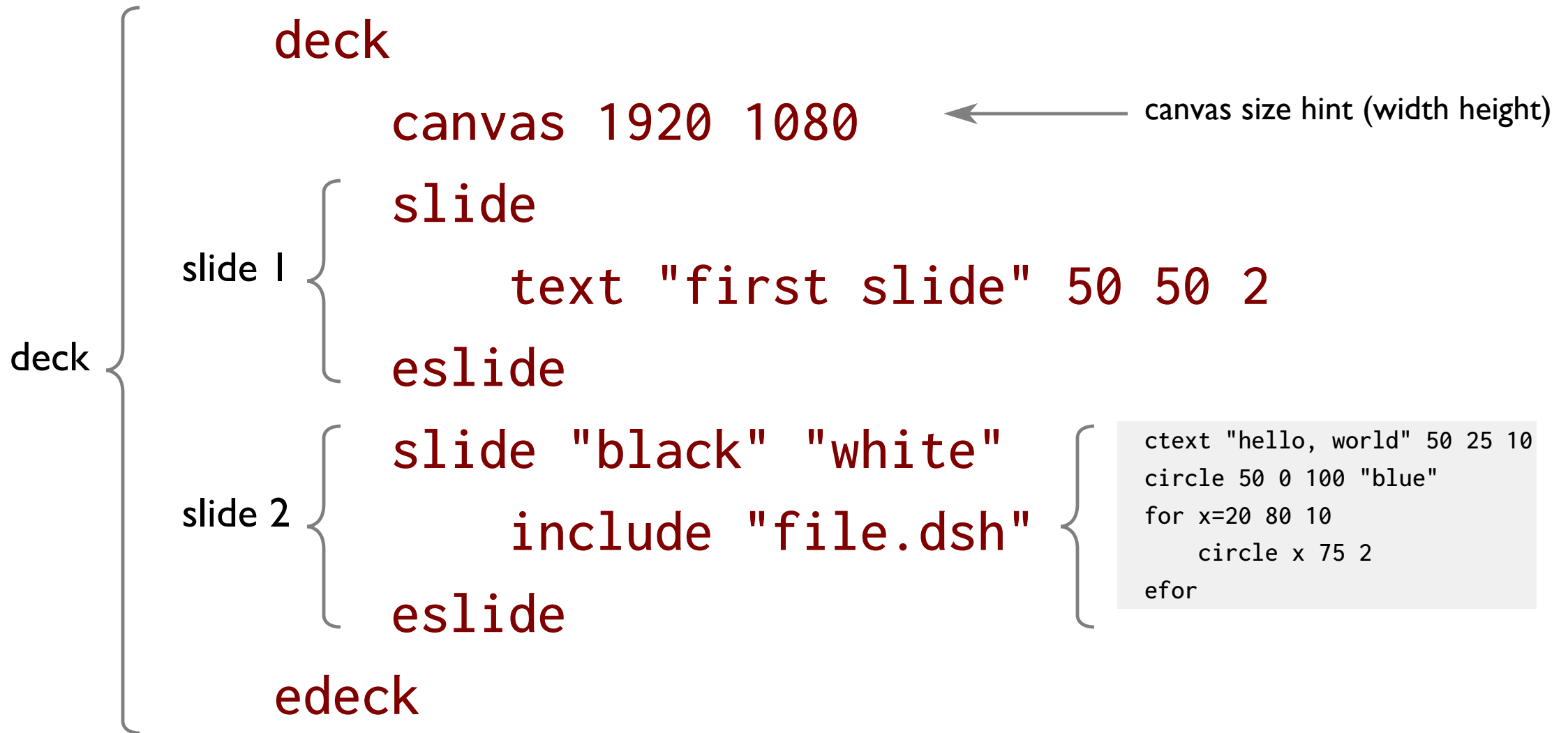
*hello, world*

text "hello, world" 80 20 2

"serif" "red" 50

*hello, world*

# Structure



# Percent Grid



# Object Index

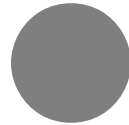
Text

hello, world

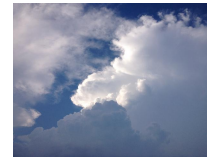
The quick brown  
fox jumped over  
the lazy dog

*what's up, Doc?*

Graphics



Images



sky

Lists

- First
- Second
- Third

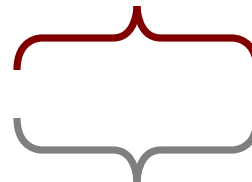
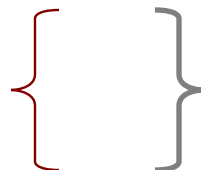
1. First
2. Second
3. Third

First  
Second  
Third

Arrows



Braces



# Textual Elements

description	keyword	mandatory	optional
Left-aligned	<code>text</code>	<code>"..." x y fontsize</code>	<code>font color op link</code>
Centered	<code>ctext</code>	<code>"..." x y fontsize</code>	<code>font color op link</code>
End-aligned	<code>etext</code>	<code>"..." x y fontsize</code>	<code>font color op link</code>
Rotated	<code>rtext</code>	<code>"..." x y angle fontsize</code>	<code>font color op link</code>
Text on an arc	<code>arctext</code>	<code>"..." x y rad a1 a2 fontsize</code>	<code>font color op link</code>
Block text	<code>textblock</code>	<code>"..." x y w fontsize</code>	<code>font color op link</code>
File contents	<code>textfile</code>	<code>"file" x y fontsize</code>	<code>font color op spacing</code>
Code listing	<code>textcode</code>	<code>"file" x y w fontsize</code>	<code>font color</code>

hello, world

(x,y)

```
text "... " x y fontsize [font] [color] [op] [link]
```

abc

```
text "abc" 20 20 4
```

abc

```
text "abc" 75 20 7 "mono" "maroon"
```



hello, world

(x,y)

```
ctext "... " x y fontsize [font] [color] [op] [link]
```

abc

```
ctext "abc" 20 20 4
```

abc

```
ctext "abc" 80 20 7 "mono" "maroon"
```

hello, world.

(x,y)

```
etext "... " x y fontsize [font] [color] [op] [link]
```

abc

```
etext "abc" 20 20 4
```

abc

```
etext "abc" 80 20 7 "mono" "maroon"
```

hello, world

(x,y)

`rtext "... " x y angle fontsize [font] [color] [op] [link]`

abc

`ctext 20 20 30 3`

abc

`ctext 50 20 90 5`

abc

`ctext 80 20 270 4 "sans" "maroon"`

a1 hello there world a2  
(x,y)

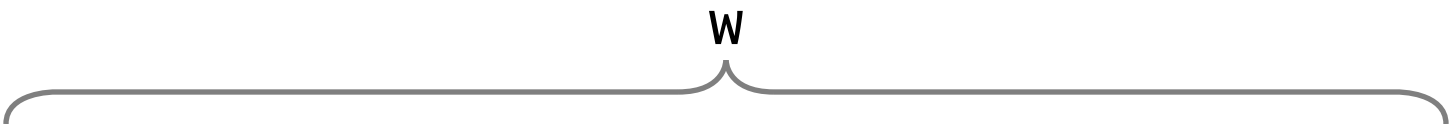
```
arctext "... " x y radius a1 a2 fontsize [font] [color] [op]
```

What is up

This is curvy

```
arctext "What is up" 25 20 10 180 90 3 "mono"
```

```
arctext "This is curvy" 75 30 10 180 360 3 "mono"
```

(x, y)  “Where justice is denied, where poverty is enforced,  
where ignorance prevails, and where any one class  
is made to feel that society is an organized conspiracy  
to oppress, rob and degrade them, neither persons  
nor property will be safe.”

`textblock "... " x y w fontsize [font] [color] [op]`

“Where justice is denied, where poverty is enforced,  
where ignorance prevails, and where any one class  
is made to feel that society is an organized conspiracy  
to oppress, rob and degrade them, neither persons  
nor property will be safe.”

`textblock "... " 10 35 30 2`

“Where justice is denied,  
where poverty is enforced,  
where ignorance prevails,  
and where any one class is  
made to feel that society  
is an organized conspiracy  
to oppress, rob and degrade  
them, neither persons nor  
property will be safe.”

`textblock "... " 50 35 10 1 "sans" "maroon"`

(x,y) This is the contents  
of a file. it has lines of text.  
Reading is fundamental.

```
textfile "filename" x y fontsize [font] [color] [op]
```

This is the contents  
of a file. it has lines of text.  
Reading is fundamental.

```
textfile "example.txt" 10 35 2
```

```
package main
```

```
import "fmt"
```

```
func main() {
```

```
    fmt.Println("hello, world")
```

```
}
```

```
textfile "hw.go" 55 35 1.6 "mono" "maroon"
```

(x,y)

W

```
package main
```

```
import "fmt"
```

```
func main() {  
    fmt.Println("hello, world")  
}
```

`textcode "filename" x y w fontsize [color]`

```
package main  
  
import "fmt"  
  
func main() {  
    fmt.Println("hello, world")  
}
```

`textcode "hw.go" 10 35 25 1.0`

```
package main
```

```
import "fmt"
```

```
func main() {  
    fmt.Println("hello, world")  
}
```

`textcode "hw.go" 55 35 40 1.6 "maroon"`

# Graphical Elements

description	keyword	mandatory	optional
Line	<b>line</b>	x1 y1 x2 y2 lw	color op
Horizontal line	<b>hline</b>	x y w	lw color op
Vertical line	<b>vline</b>	x y h	lw color op
Elliptical arc	<b>arc</b>	x y w h a1 a2	lw color op
Quadratic Bezier	<b>curve</b>	bx by cx cy ex ey	lw color op
Circle	<b>circle</b>	x y w	color op
Area circle	<b>acircle</b>	x y area	color op
Ellipse	<b>ellipse</b>	x y w h	color op
Square	<b>square</b>	x y w	color op
Rectangle	<b>rect</b>	x y w h	color op
Rounded rectangle	<b>rrect</b>	x y w h radius [color]	color
Pill shape	<b>pill</b>	x y w h [color]	color
Polygon	<b>polygon</b>	"x1 x2...xn" "y1 y2...yn"	color op
N-sided star	<b>star</b>	x y sides inner outer	color op

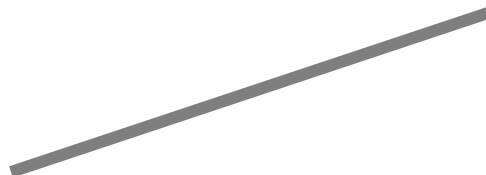


lw {   
(x1,y1) (x2,y2)

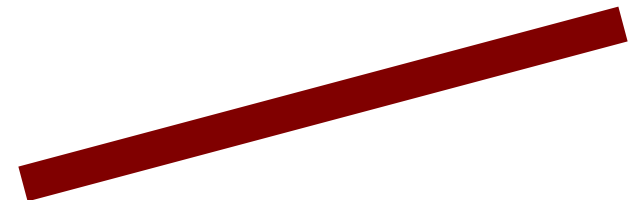
line x1 y1 x2 y2 lw [color] [op]



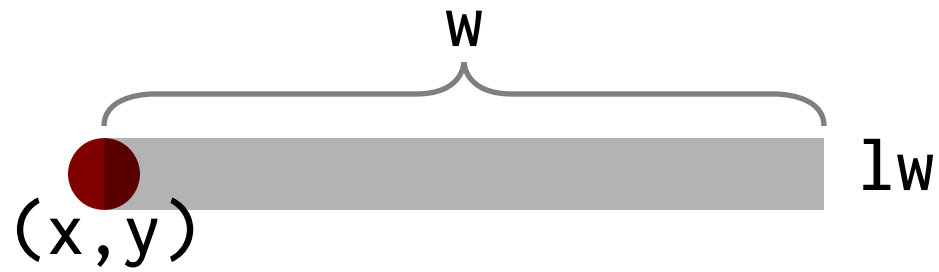
line 10 20 30 20



line 40 20 60 30 0.5



line 70 20 95 30 1.5 "maroon"



`hline x y w [lw] [color] [op]`



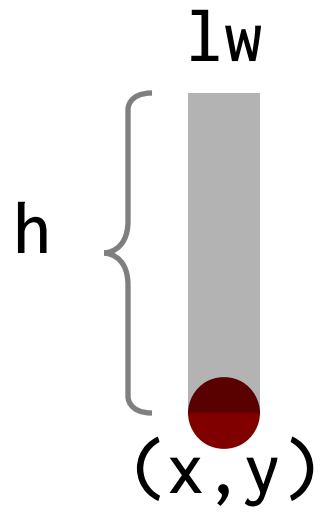
`hline 15 20 10`



`hline 40 20 20 1`



`hline 70 20 20 5 "maroon" 20`



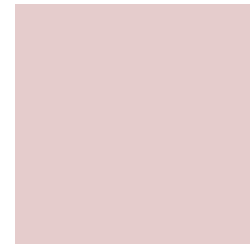
`vline x y h [lw] [color] [op]`



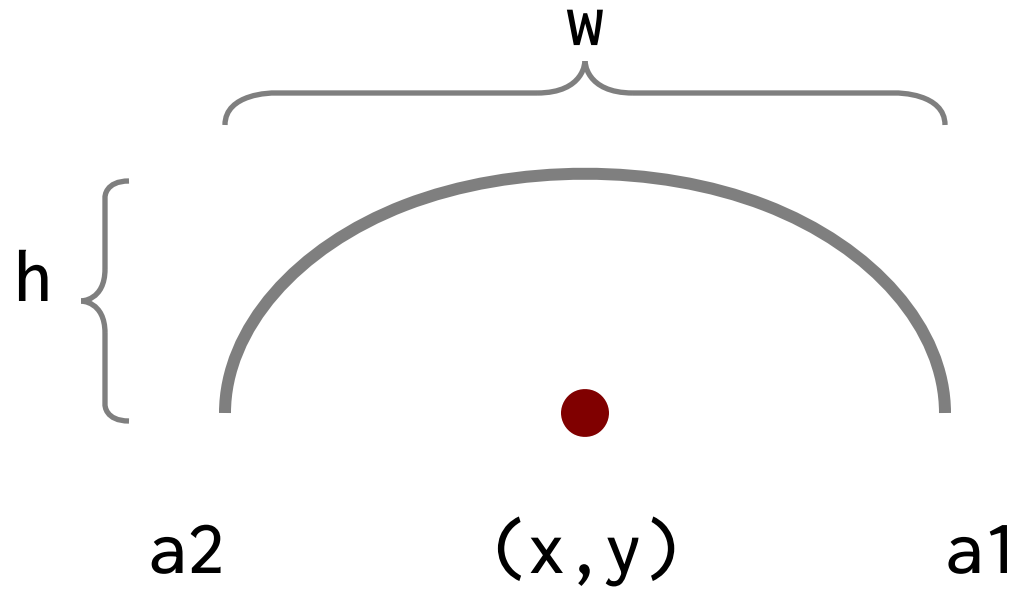
`vline 20 20 15`



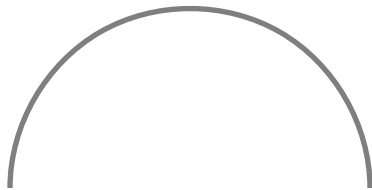
`vline 50 20 15 2`



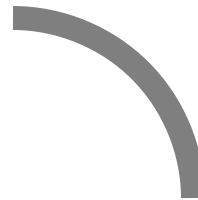
`vline 80 20 15 10 "maroon" 20`



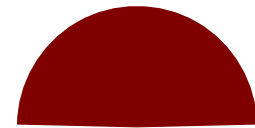
`arc x y w h a1 a2 [lw] [color] [op]`



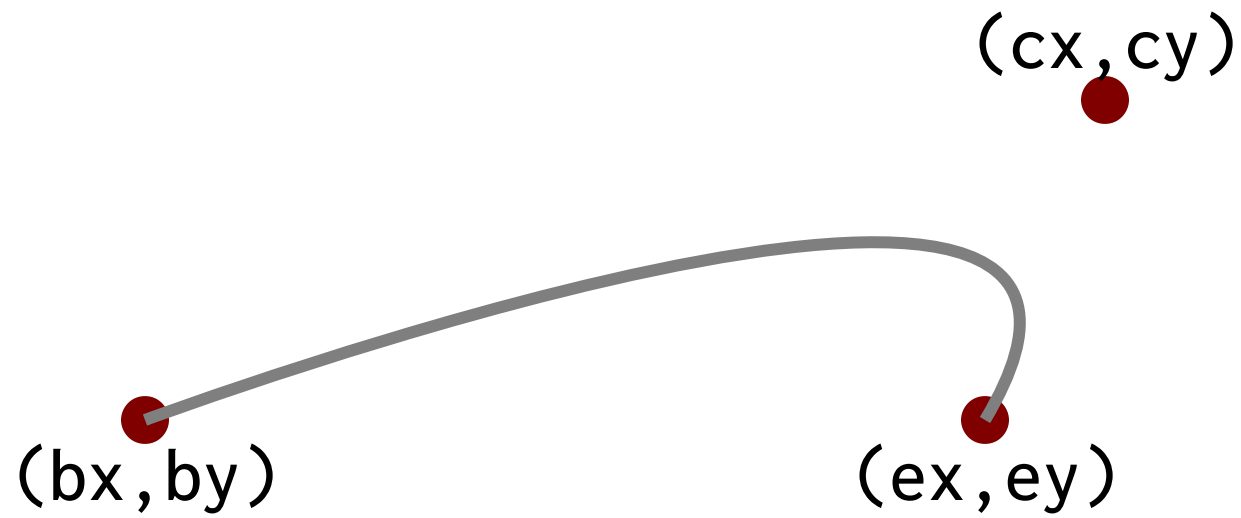
`arc 20 20 15 15 0 180`



`arc 50 20 15 15 0 90 1`



`arc 80 20 5 5 0 180 5 "maroon"`



`curve bx by cx cy ex ey [lw] [color] [op]`



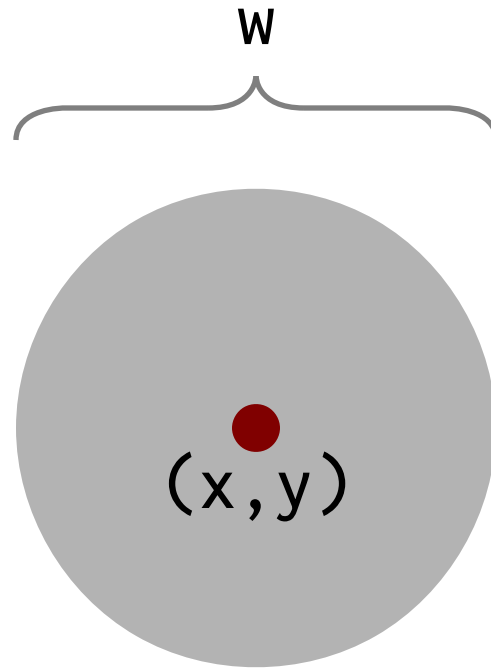
`curve 15 20 25 30 30 25`



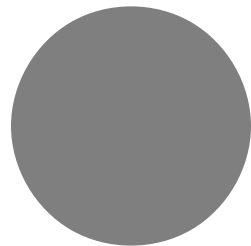
`curve 15 20 25 30 30 25`



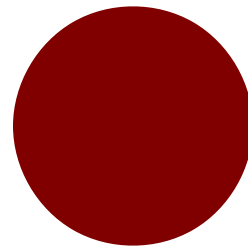
`curve 70 20 70 30 90 25 0.5 "maroon"`



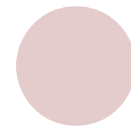
`circle x y w [color] [op]`



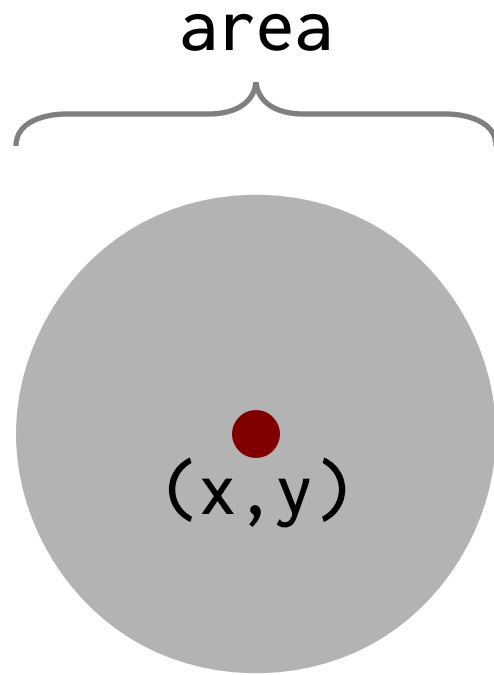
`circle 20 20 10`



`circle 50 20 10 "maroon"`



`circle 80 20 5 "maroon" 20`



`acircle x y area [color] [op]`



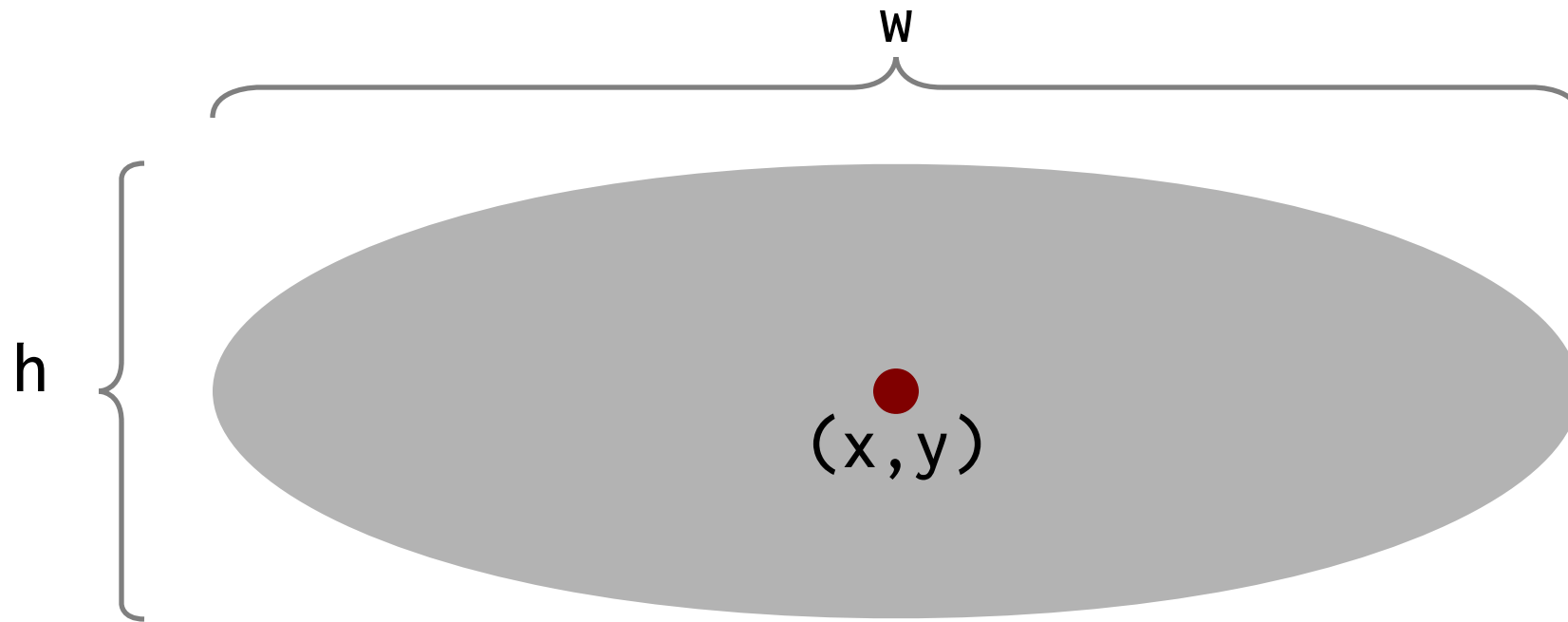
`acircle 20 20 10`



`acircle 50 20 10 "maroon"`



`acircle 80 20 5 "maroon" 20`



`ellipse x y w h [color] [op]`



`ellipse 20 20 10 5`

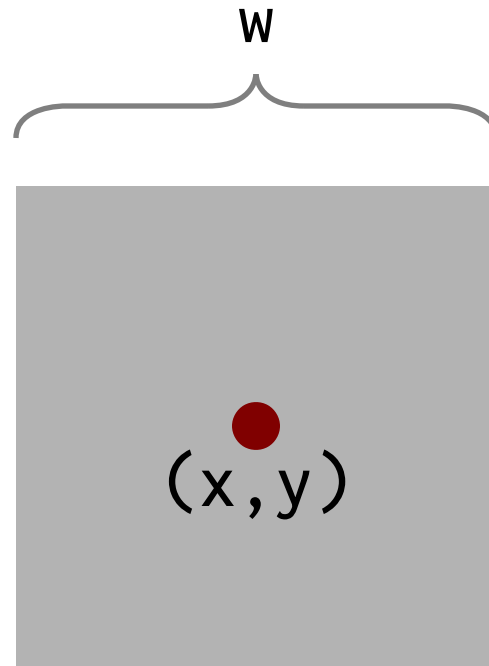


`ellipse 50 20 10 5 "maroon"`



`ellipse 80 20 5 10 "maroon" 20`

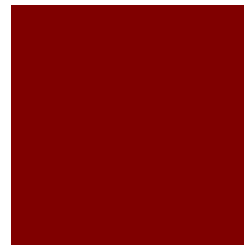




square x y w [color] [op]



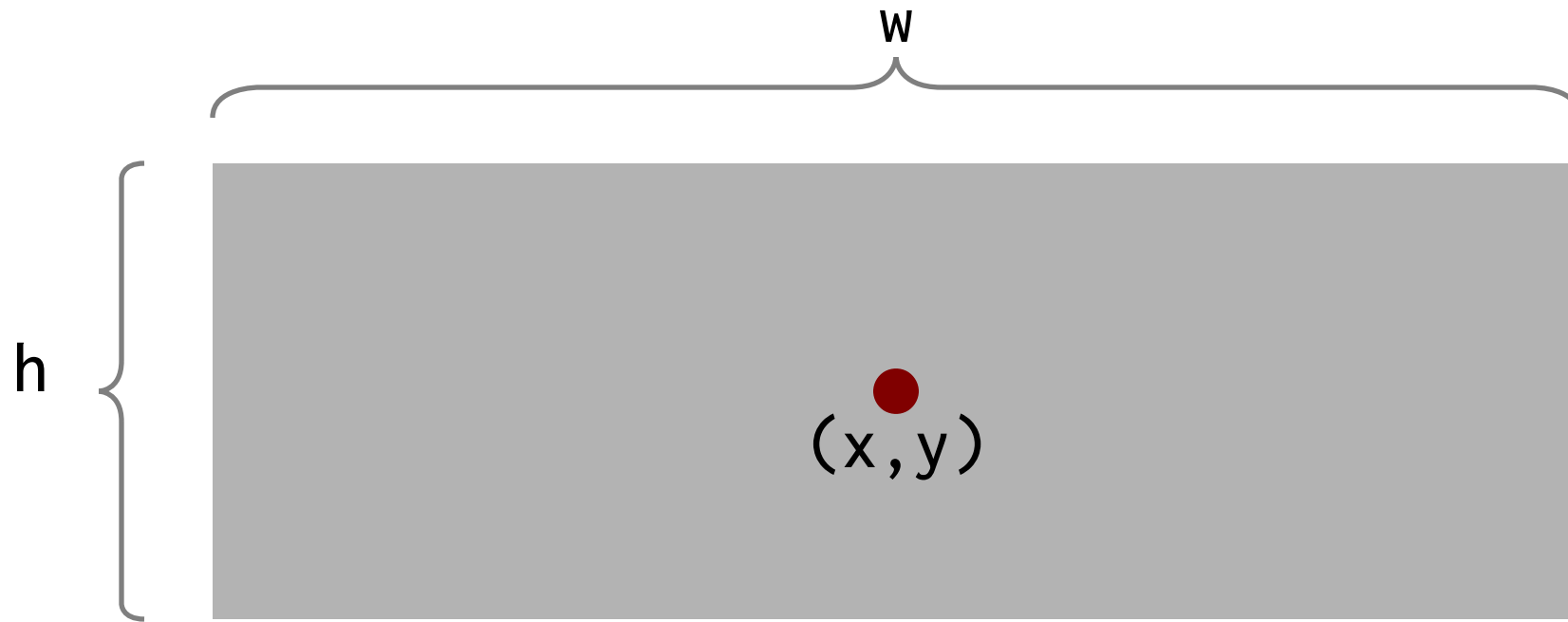
square 20 20 10



square 50 20 10 "maroon"



square 80 20 5 "maroon" 20



`rect x y w h [color] [op]`



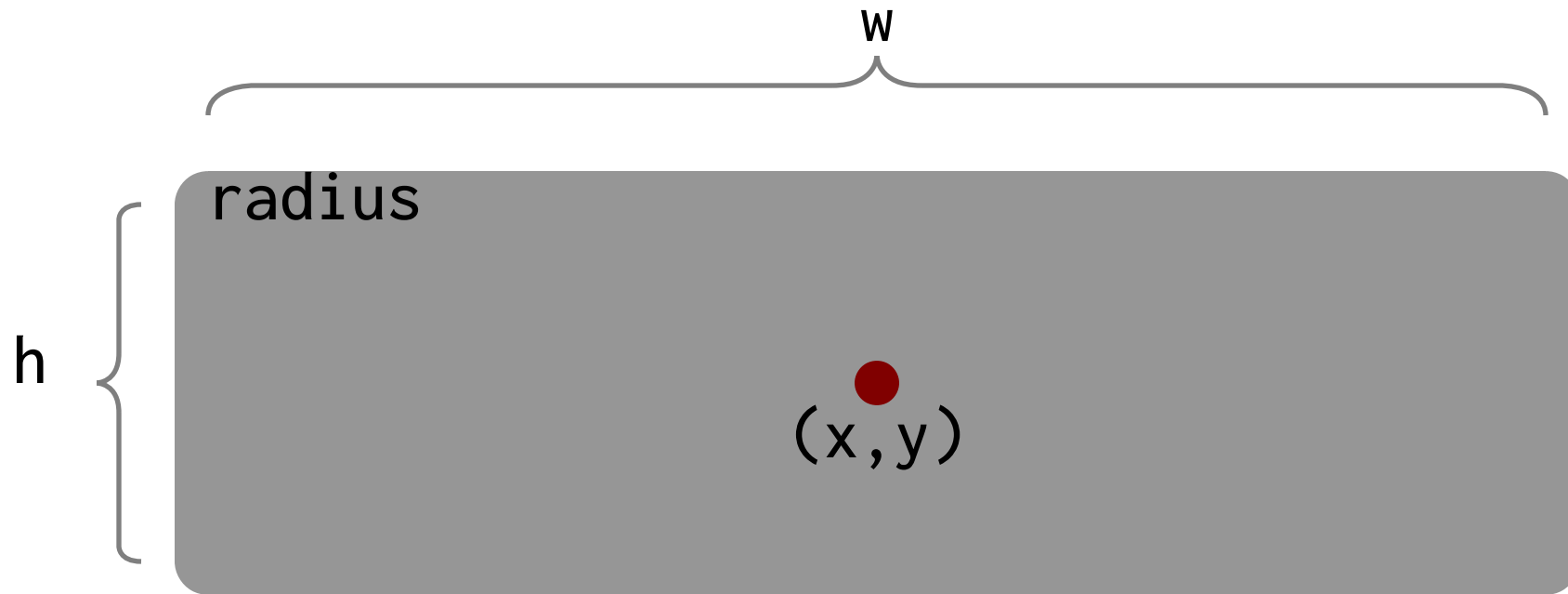
`rect 20 20 10 5`



`rect 50 20 10 5 "maroon"`



`rect 80 20 5 10 "maroon" 20`



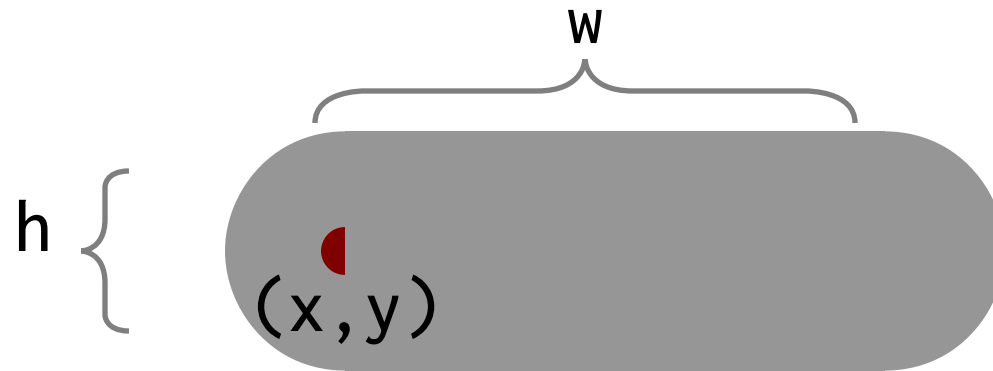
`rrect x y w h radius [color] [op]`



`rrect 20 20 10 5 1`



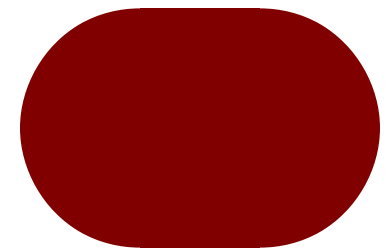
`rrect 80 20 5 10 1 "maroon"`



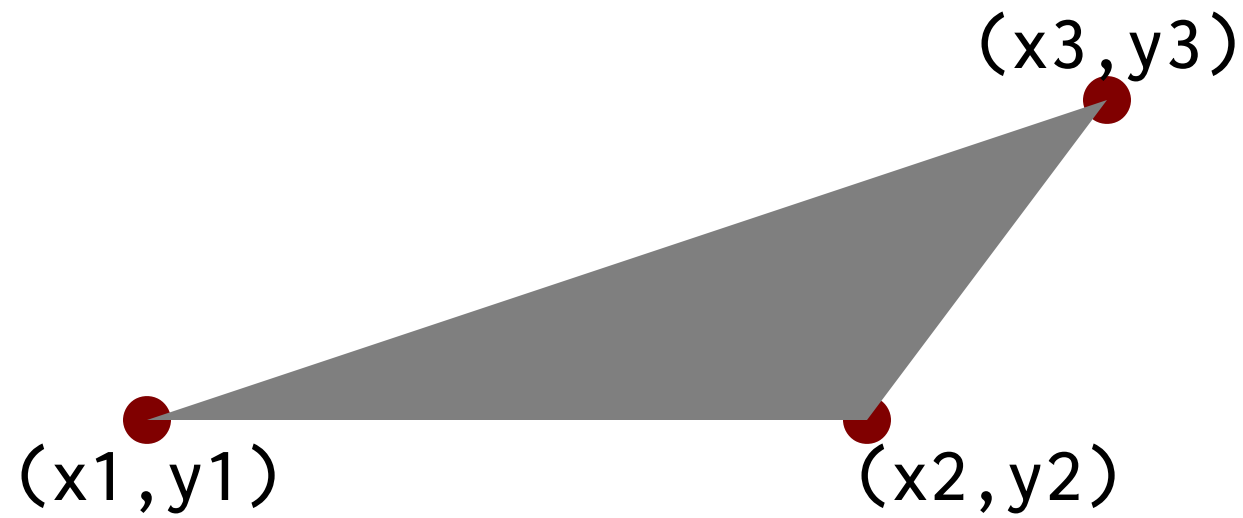
`pill x y w h [color]`



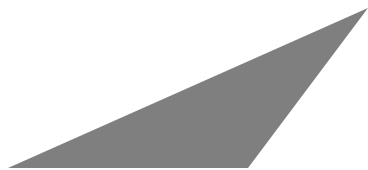
`pill 20 20 10 5`



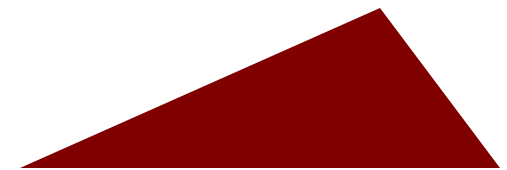
`pill 80 20 5 10 "maroon"`



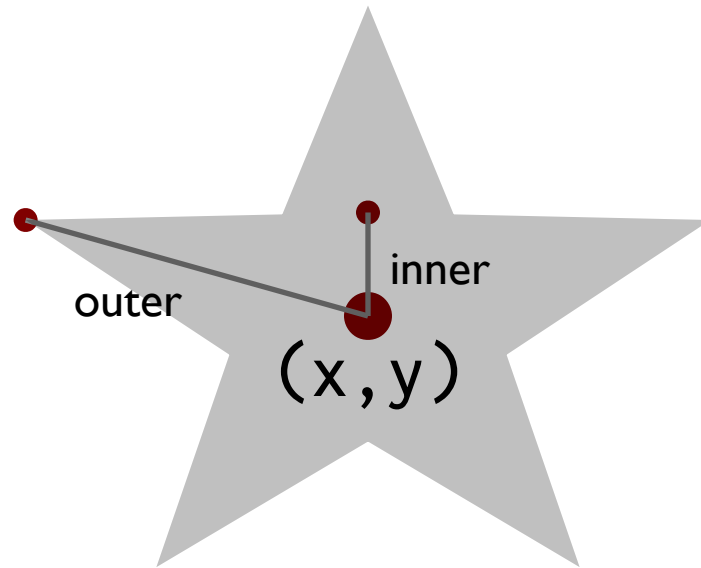
`polygon "x1 x2...xn" "y1 y2...yn" [color] [op]`



`polygon "10 25 20" "20 30 20"`



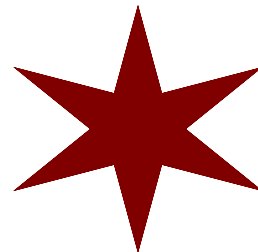
`polygon "70 85 90" "20 30 20" "maroon"`



`star x y sides inner outer [color] [op]`



`star 20 20 5 2 6`



`star 50 20 12 2 5 "maroon"`



`star 80 ey 24 2 8 "maroon" 20`

# *Images*

description	keyword	mandatory	optional
Image	<b>image</b>	"file" x y w h	scale "link"
Captioned image	<b>cimage</b>	"file" "caption" x y w h	scale "link"

Note: the scale value is a percentage from 1-100, and link is a URL

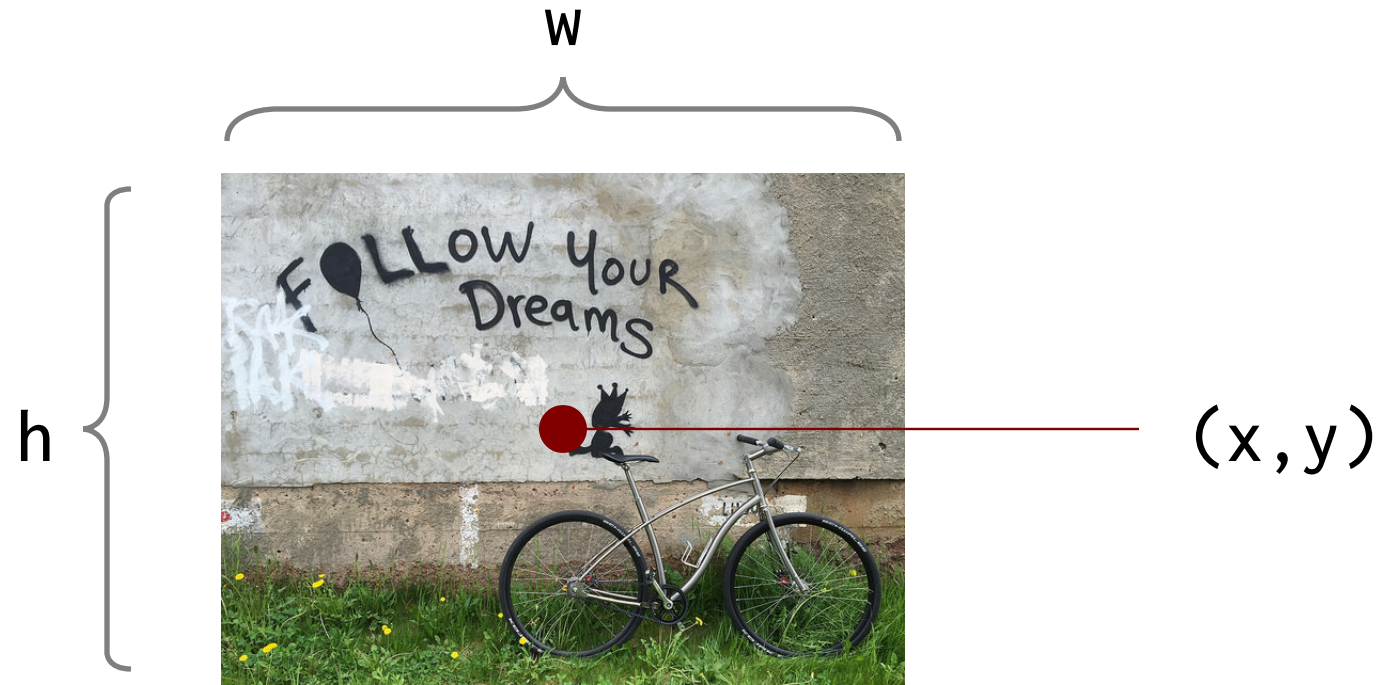


image "file" x y w h [scale] [link]

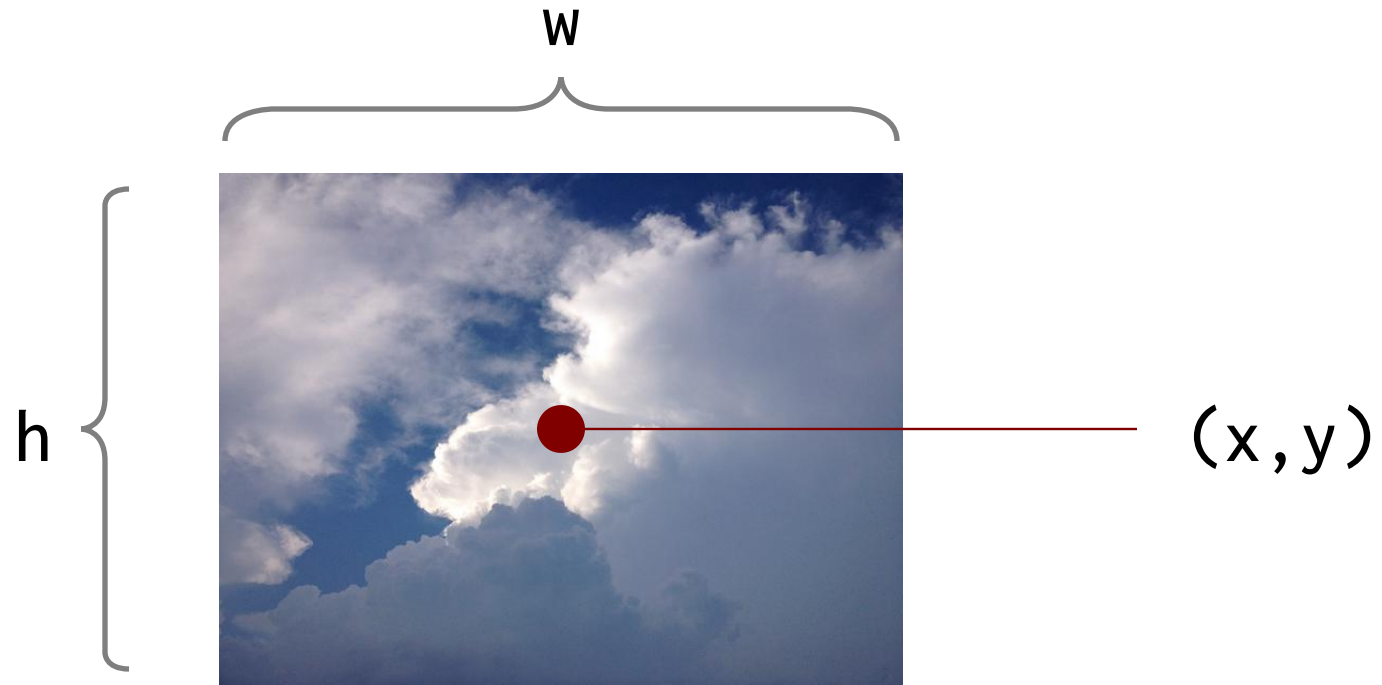


image "follow.jpg" 20 25 640 480 10



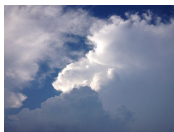
image "follow.jpg" 75 25 640 480 30





sky

`cimage "file" "caption" x y w h [scale] [link] [capsize]`



sky



sky

`cimage "cloudy.jpg" "sky" 20 25 640 480 10`

`cimage "cloudy.jpg" "sky" 75 25 640 480 30 "" 1.5`

# *Lists*

description	keyword	mandatory	optional
Plain list	<code>list</code>	<code>x y fontsize</code>	<code>font color op spacing</code>
Bullet list	<code>blist</code>	<code>x y fontsize</code>	<code>font color op spacing</code>
Numbered list	<code>nlist</code>	<code>x y fontsize</code>	<code>font color op spacing</code>
Centered list	<code>clist</code>	<code>x y fontsize</code>	<code>font color op spacing</code>

```
list x y fs
(x,y) li "first"
      li "second"
      li "third"
elist
```

`list x y fontsize [font] [color] [op] [spacing]`

```
list 20 30 2.5 one
      li "one"
      li "two" two
      li "three" three
elist
```

```
list 85 30 4 "serif" "maroon" 100 1.0
      li "one"
      li "two"
      li "three"
elist
```

*one*  
*two*  
*three*

```
      blist x y fs
(x,y)  li "first"
        li "second"
        li "third"
      elist
```

`blist x y fontsize [font] [color] [op] [spacing]`

```
blist 20 30 2.5 ● one
  li "one"
  li "two" ● two
  li "three" ● three
elist
```

```
blist 85 30 4 "serif" "maroon" 100 1.0
  li "one"
  li "two"
  li "three"
elist
```

● *one*  
● *two*  
● *three*

```
nlist x y fs
(x,y) li "first"
      li "second"
      li "third"
elist
```

`nlist x y fontsize [font] [color] [op] [spacing]`

```
nlist 20 30 2.5 1. one
      li "one"
      li "two"   2. two
      li "three" 3. three
elist
```

```
nlist 85 30 4 "serif" "maroon" 100 1.0
      li "one"
      li "two"
      li "three"
elist
```

*1. one*  
*2. two*  
*3. three*

```
clist x y fs
(x,y) li "first"
      li "second"
      li "third"
elist
```

```
clist x y fontsize [font] [color] [op] [spacing]
```

```
clist 30 30 2.5
  li "first one"
  li "next"
  li "and last"
elist
```

first one  
next  
and last

```
clist 90 30 4 "serif" "maroon" 100 1.0
  li "first"
  li "next"
  li "and last"
elist
```

*first*  
*next*  
*and last*

# Arrows

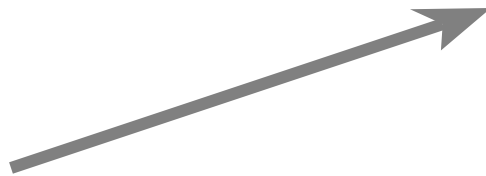
description	keyword	mandatory	optional
Straight	<code>arrow</code>	<code>x1 y1 x2 y2</code>	<code>lw aw ah color op</code>
Left curved	<code>lcarrow</code>	<code>bx by cx cy ex ey</code>	<code>lw aw ah color op</code>
Right curved	<code>rcarrow</code>	<code>bx by cx cy ex ey</code>	<code>lw aw ah color op</code>
Up curved	<code>ucarrow</code>	<code>bx by cx cy ex ey</code>	<code>lw aw ah color op</code>
Down curved	<code>dcarrow</code>	<code>bx by cx cy ex ey</code>	<code>lw aw ah color op</code>



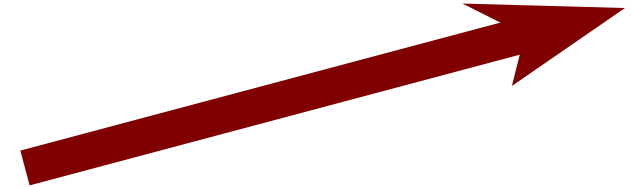
`arrow x1 y1 x2 y2 [lw] [aw] [ah] [color] [op]`



`arrow 10 20 30 20`

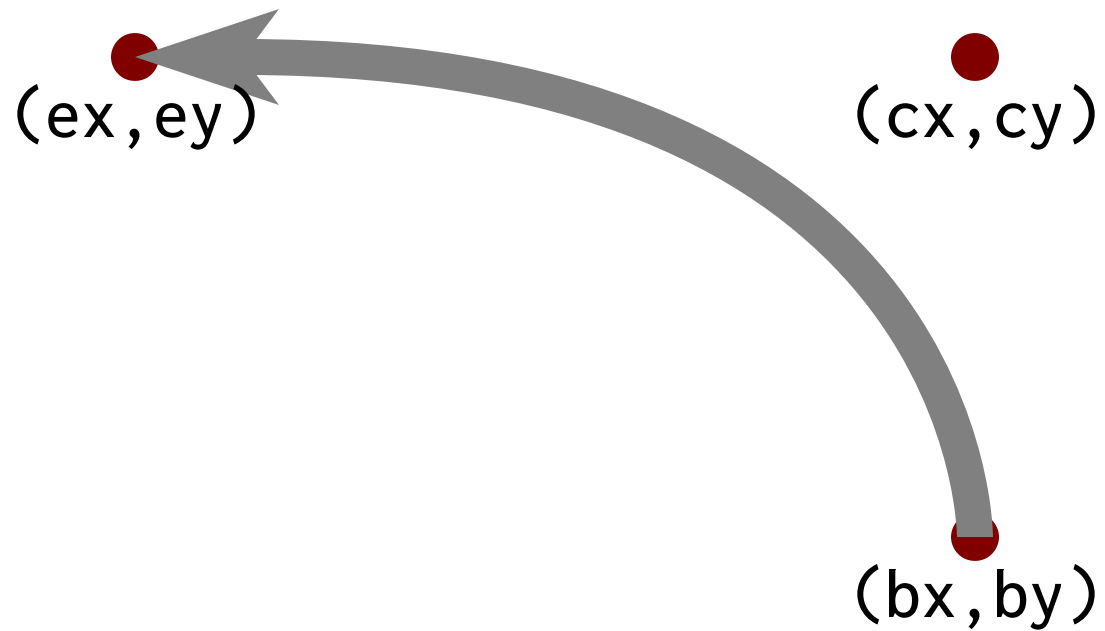


`arrow 40 20 60 30 0.5`

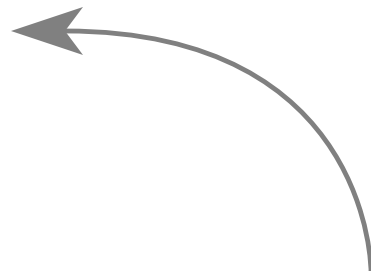


`arrow 70 20 95 30 1.5 6 6 "maroon"`

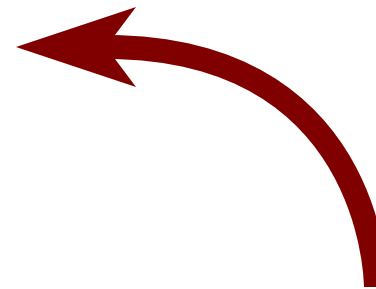




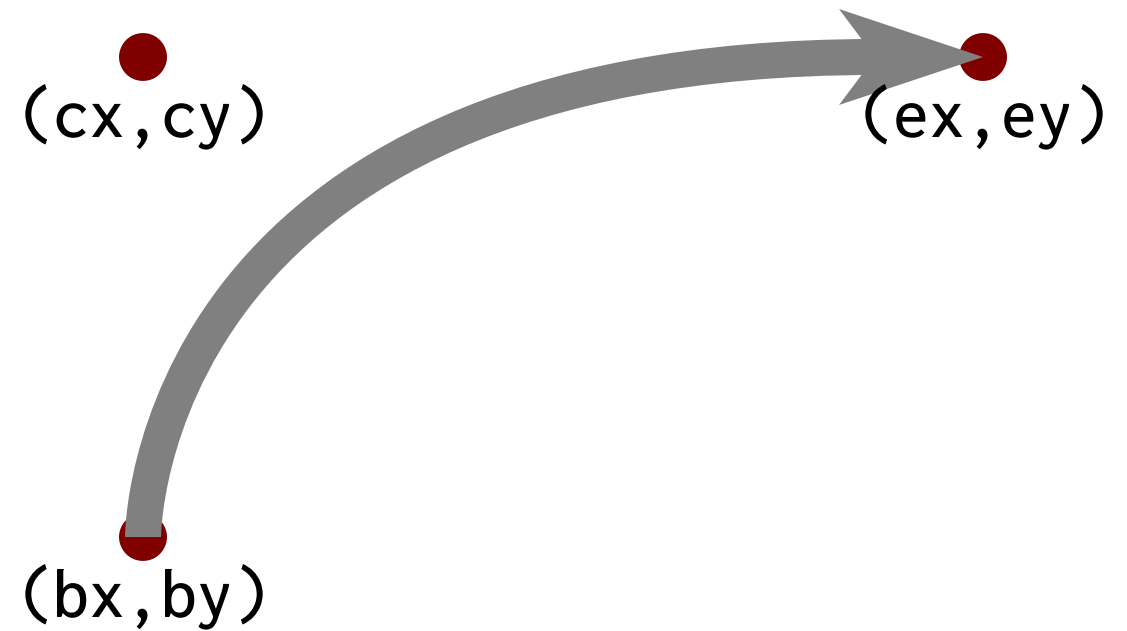
`lcarrow bx by cx cy ex ey [lw] [aw] [ah] [color] [op]`



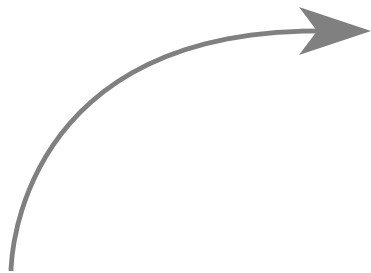
`lcarrow 30 20 30 35 15 35`



`lcarrow 70 20 70 35 55 35 1 5 5 "maroon"`



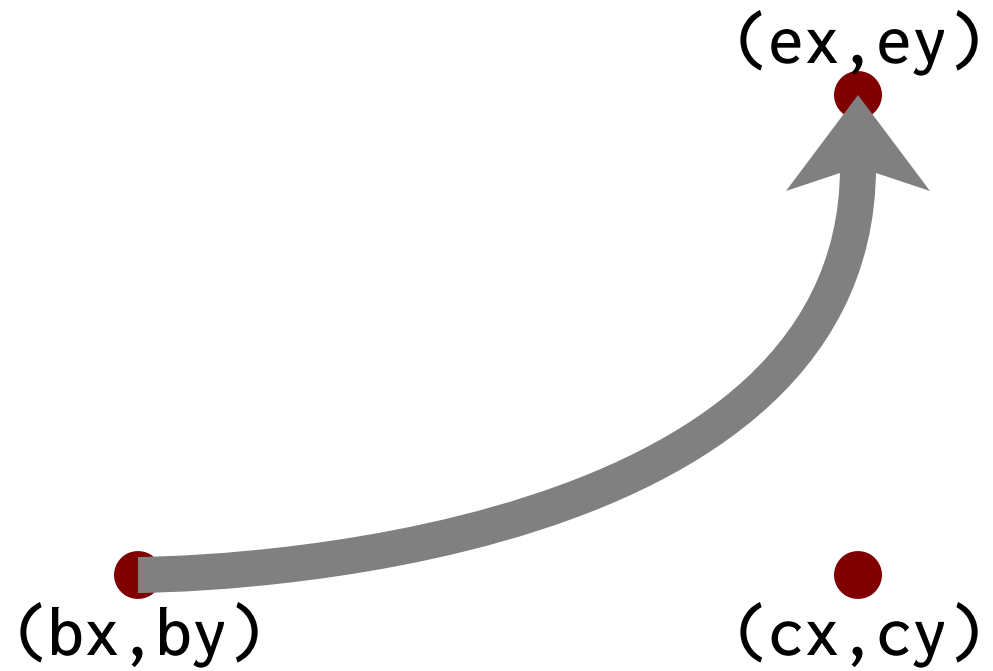
`rcarrow bx by cx cy ex ey [lw] [aw] [ah] [color] [op]`



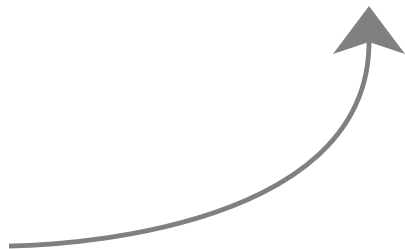
`rcarrow 15 20 15 35 30 35`



`rcarrow 50 20 50 35 70 35 1 5 5 "maroon"`



`ucarrow bx by cx cy ex ey [lw] [aw] [ah] [color] [op]`



`ucarrow 15 20 30 20 30 35`



`rcarrow 50 20 70 20 70 35 1 5 5 "maroon"`

$(bx, by)$

$(cx, cy)$

$(ex, ey)$

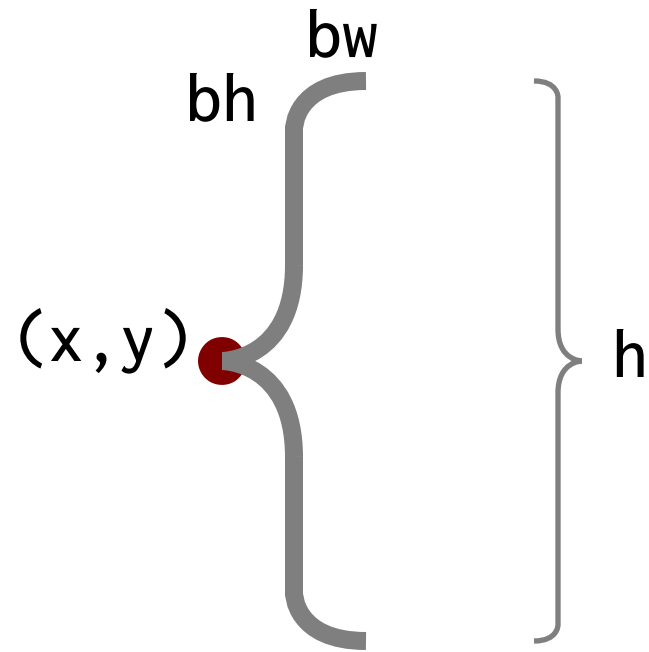
`dcarrow bx by cx cy ex ey [lw] [aw] [ah] [color] [op]`

`dcarrow 15 35 30 30 20`

`dcarrow 50 35 70 35 70 20 1 5 5 "maroon"`

# *Braces*

description	keyword	mandatory	optional
Left brace	<b>lbrace</b>	x y fontsize bw bh	lw color op
Right brace	<b>rbrace</b>	x y fontsize bw bh	lw color op
Up brace	<b>ubrace</b>	x y fontsize bw bh	lw color op
Down brace	<b>dbrace</b>	x y fontsize bw bh	lw color op



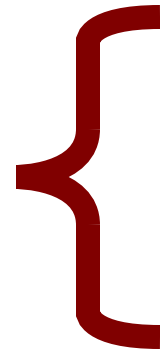
`lbrace x y h bw bh [lw] [color] [op]`



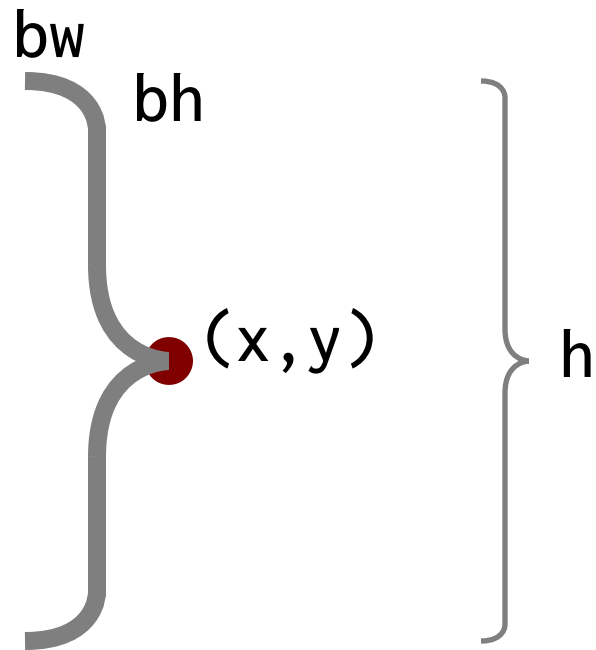
`lbrace 20 25 20 2 2`



`lbrace 50 25 20 4 4 1`



`lbrace 80 25 20 6 3 1 "maroon"`



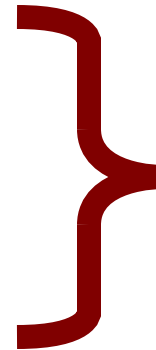
`rbrace x y h bw bh [lw] [color] [op]`



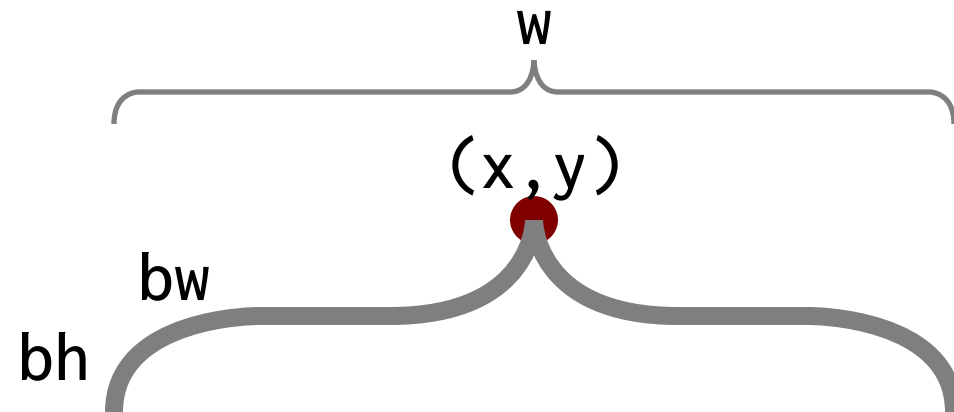
`rbrace 20 25 20 2 2`



`rbrace 50 25 20 4 4 1`



`rbrace 80 25 20 6 3 1 "maroon"`



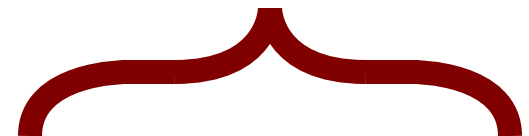
`ubrace x y w bw bh [lw] [color] [op]`



`ubrace 20 25 20 2 2`

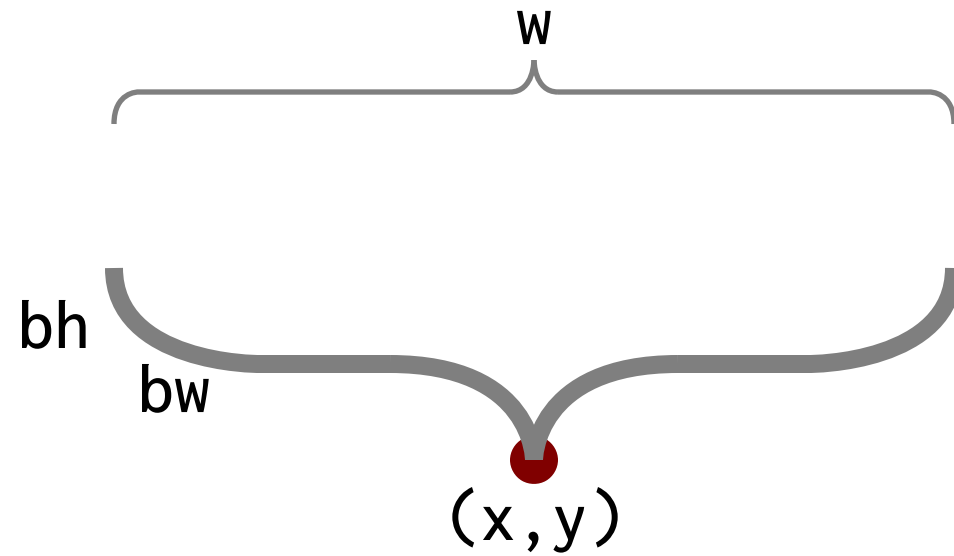


`ubrace 50 25 20 4 4 1`



`ubrace 80 25 20 4 4 1 "maroon"`





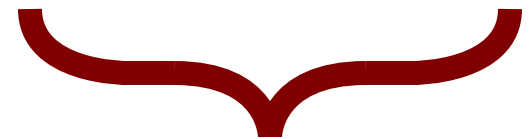
`dbrace x y w bw bh [lw] [color] [op]`



`dbrace 20 25 20 2 2`



`dbrace 50 25 20 4 4 1`



`dbrace 80 25 20 4 4 1 "maroon"`

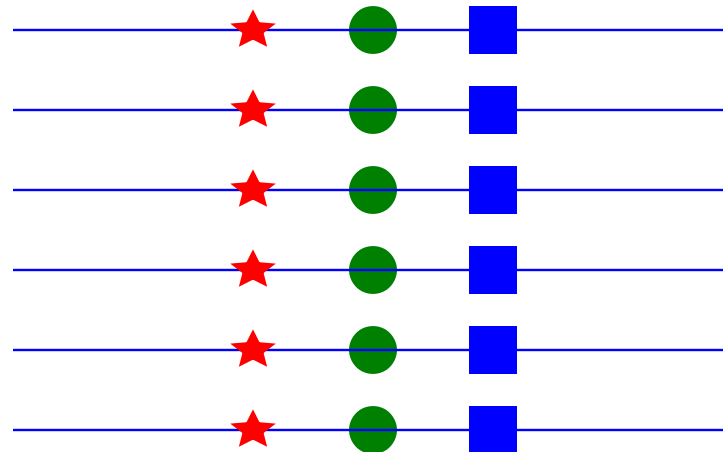
# *Loop, Assignments, Data and Grid*

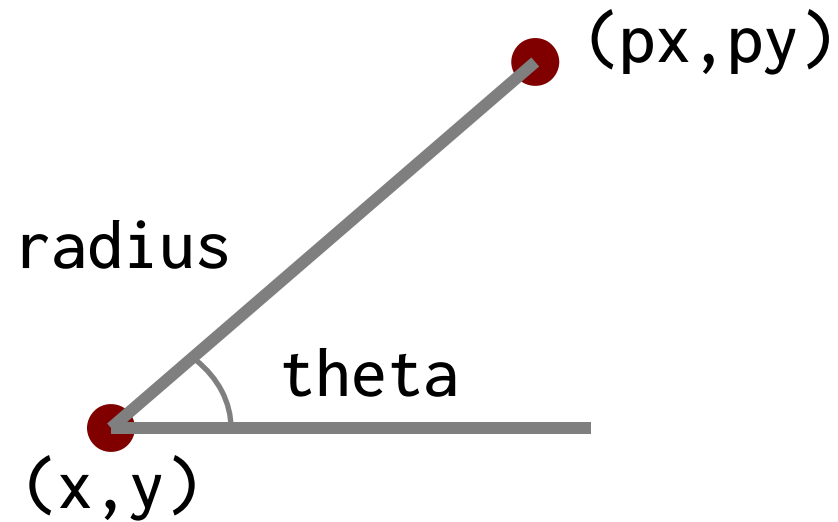
description	keyword	mandatory
Loop	<code>for v=</code>	<code>begin end [increment] ... efor</code>
Polar coordinate (x)	<code>x=polarx</code>	<code>x y radius angle</code>
Polar coordinate (y)	<code>y=polary</code>	<code>x y radius angle</code>
Area	<code>value=area</code>	<code>expression</code>
Formatted text	<code>value=format</code>	<code>fmt expression</code>
Random number	<code>value=random</code>	<code>min max</code>
Value mapping	<code>value=vmap</code>	<code>data min1 max1 min2 max2</code>
In-line data	<code>data</code>	<code>"file" ... edata</code>
Objects on a grid	<code>grid</code>	<code>grid "file" x y hspace vspace edge</code>

```
for v=begin end [increment]  
...items to repeat using v  
efor
```

```
for v=begin end [increment]...efor
```

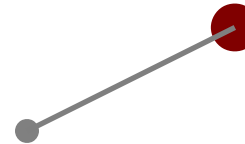
```
for v=10 35 5  
  hline 50 v 30 0.1 "blue"  
  star 60 v 5 1 0.4 "red"  
  circle 65 v 2 "green"  
  square 70 v 2 "blue"  
efor
```





`px=polarx x y radius theta`  
`py=polar y x y radius theta`

```
cpx=60  
cpy=20  
px1=polarx cpx cpy 10 30  
py1=polar y cpx cpy 10 30  
line cpx cpy px1 py1  
circle cpx cpy 1 "gray"  
circle px1 py1 2 "maroon"
```



v=123.45

a=area v



area



original value

value=area expression

m1=100

m2=200

a1=area m1

a2=area m2

circle 60 20 a1 "maroon"

circle 80 20 a2



x=3.14159

y=2.0

title=format "Value=%.2f" x\*y  
Value=6.28                      format string                      expression

value=format fmt expression

v1=100.3

v2=200.234

title=format "%.2f Million (USD)" v1

subtitle=format "Total value: %.2f" v1+v2

ctext title      80 30 4 "sans" "maroon"

ctext subtitle 80 20 3 "sans" "gray"

100.30 Million (USD)

Total value: 300.53



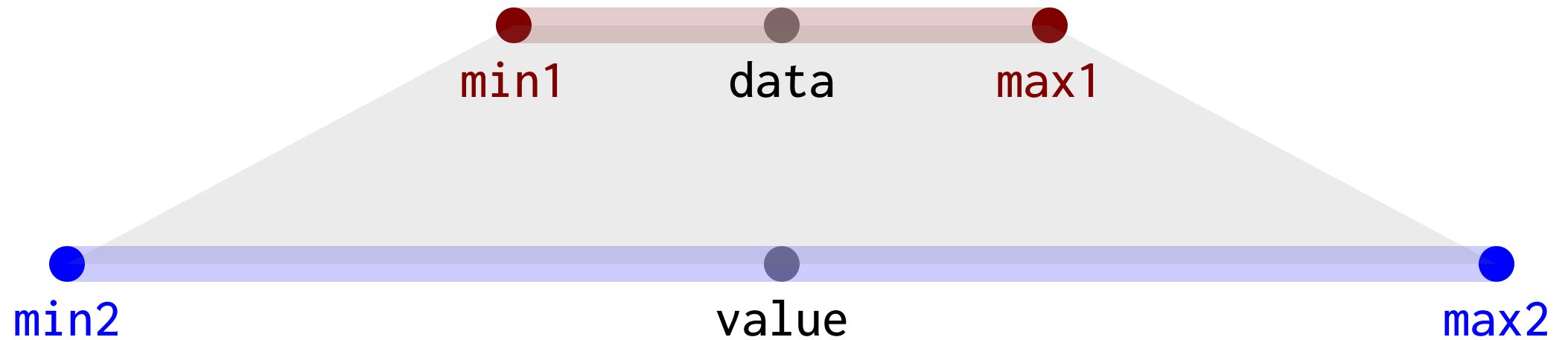
value=random min max



```
rx1=random 5 30  
ry1=random 15 35  
circle rx1 ry1 3 "maroon"
```

```
rx2=random 40 60  
ry2=random 15 35  
circle rx2 ry2 3 "green"
```

```
rx1=random 75 95  
ry1=random 15 35  
circle rx3 ry3 3 "blue"
```



`value=vmap data min1 max1 min2 max2`

```
yrmin=1776
yrmax=2021
smin=60
smax=90
vp=vmap 1945 yrmin yrmax smin smax
line  smin 20 smax 20 0.5 "gray" 20
circle smin 20 1
circle smax 20 1
circle vp 20 2 "maroon"
```





```
data "file.d" ← data file
first 20
second 100
third 200
edata
```

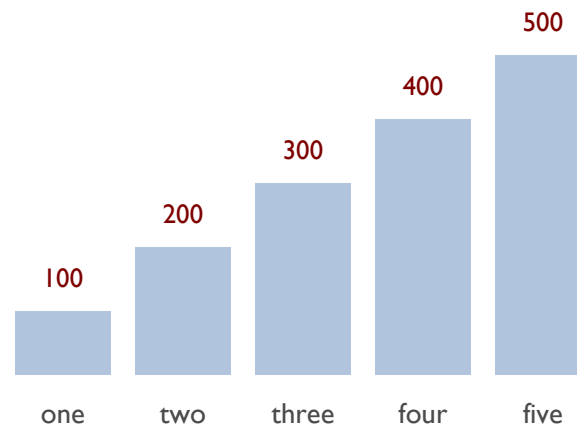
} data values

```
data "filename" ... edata
```

```
data "test.d"
  one 100
  two 200
  three 300
  four 400
  five 500
```

```
edata
```

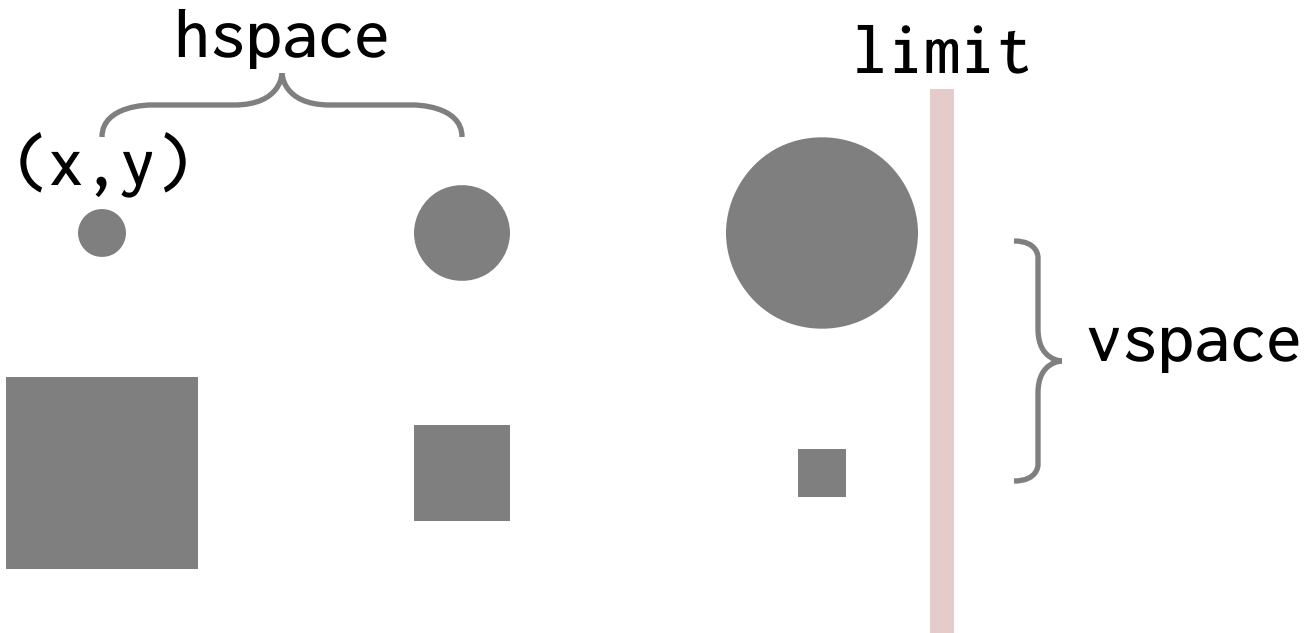
```
dchart -bar -left 50 -bottom 15 -right 70 -top 35 "test.d"
```



file

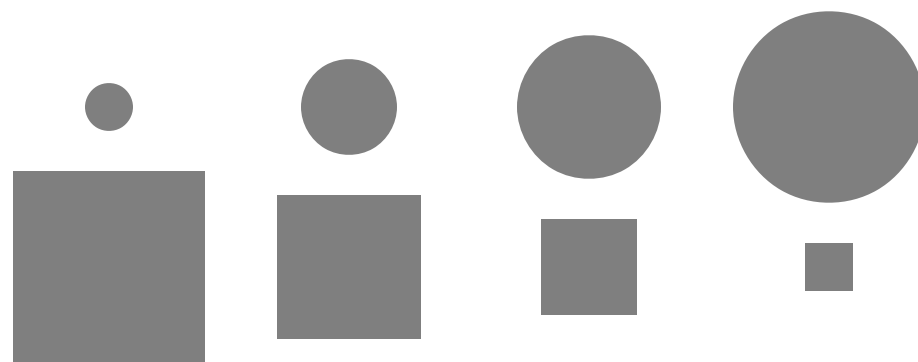


```
circle x y 2  
circle x y 4  
circle x y 8  
square x y 8  
square x y 4  
square x y 2
```



grid "file" x y hspace vspace limit

```
circle x y 2  
circle x y 4  
circle x y 6  
circle x y 8  
square x y 8  
square x y 6  
square x y 4  
square x y 2
```



grid "code/grid-ex.dsh" 35 33 10 10 65

# *Charts*

Charts

`dchart`

options "file" (see next page)

Chart Legends

`legend`

"text" x y size font color

## Chart Types

-bar	true	bar chart
-wbar	false	word bar chart
-hbar	false	horizontal bar chart
-donut	false	donut chart
-dot	false	dot chart
-lego	false	lego chart
-line	false	line chart
-pgrid	false	proportional grid
-pmap	false	proportional map
-bowtie	false	bowtie chart
-fan	false	fan chart
-radial	false	radial chart
-scatter	false	scatter chart
-slope	false	slope chart
-vol	false	volume (area) chart

## Chart Elements

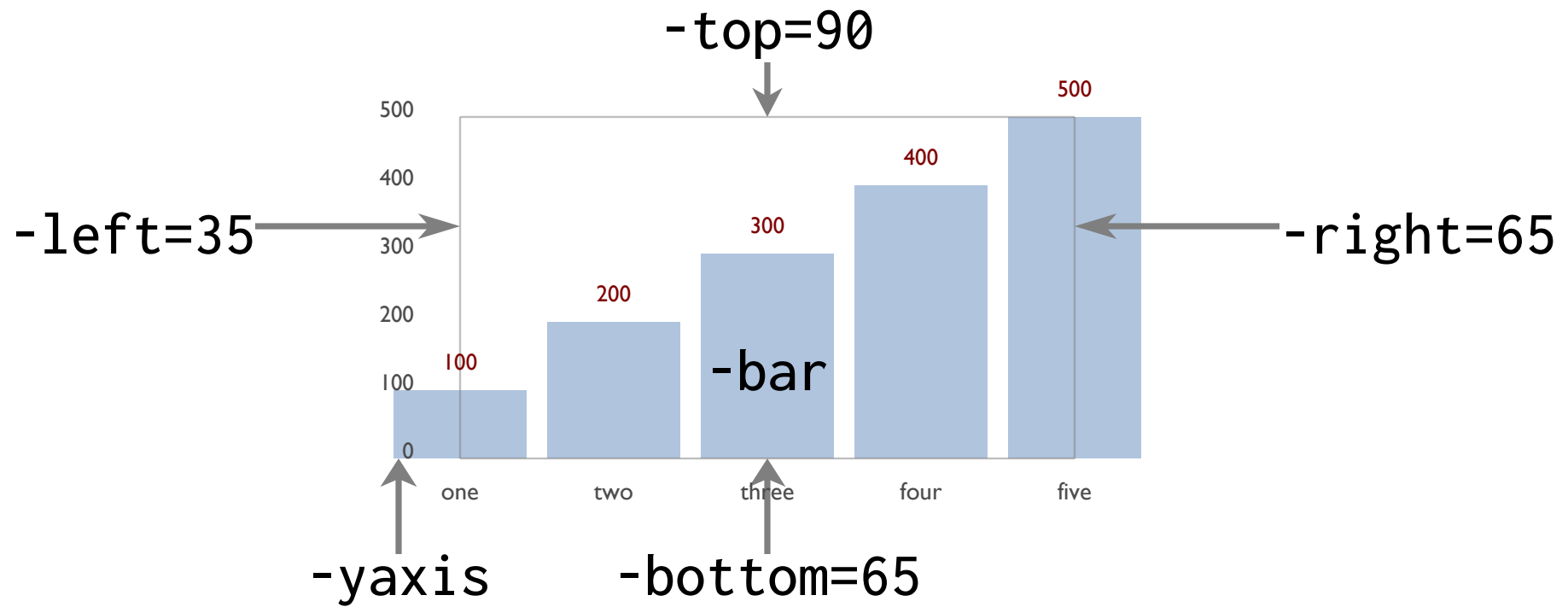
-csv	false	read CSV files
-frame	false	show a colored frame
-fulldeck	true	generate full deck markup
-grid	false	show gridlines on the y axis
-note	true	show annotations
-pct	false	show computed percentage
-rline	false	show a regression line
-solidpmap	false	show solid pmap colors
-spokes	false	show spokes in radial chart
-title	true	show the title
-val	true	show values
-xlast	false	show the last x label
-xstagger	false	stagger x axis labels
-yaxis	false	show a y axis
-chartitle	override title in data	specify the title
-datacond	low,high,color	conditional data colors
-hline	value,label	label horizontal line at value
-valpos	t=top, b=bottom, m=middle	value position
-xlabel	default=1, 0 to suppress	x axis label interval
-yrange	min,max.step	specify the y axis label range

## Position and Scaling

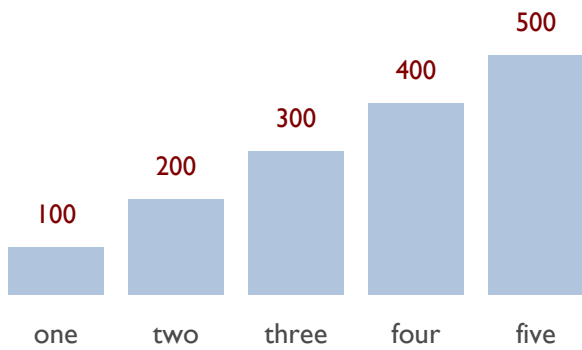
-top	80	top of the chart
-bottom	30	bottom of the chart
-left	20	left margin
-right	80	right margin
-min	data min	set the minimum data value
-max	data max	set the maximum data value

## Measures and Attributes

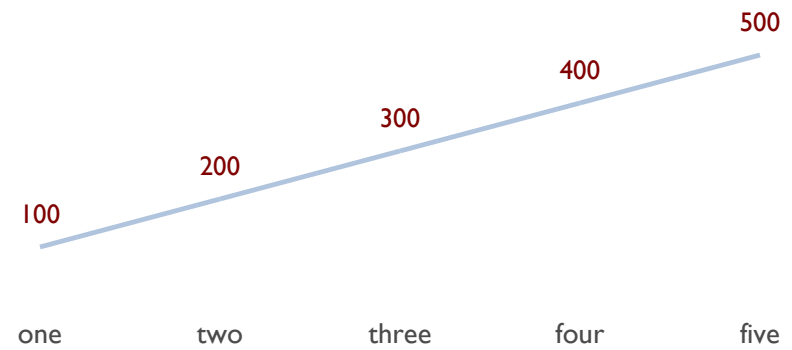
-bgcolor	white	background color
-barwidth	computed from data size	barwidth
-color	lightsteelblue	data color
-csvcol	label1,label2	specify csv columns
-datafmt	%.1f	data format for values
-dmin	false	use data minimum, not zero
-framecolor	rgb(127,127,127)	frame color
-lcolor	rgb(75,75,75)	label color
-linewidth	0.2	linewidth
-ls	2.4	linespacing
-noteloc	c=center, r=right, l=left	annotation location
-pmlen	20	pmap label length
-psize	30	diameter of the donut
-pwidth	3	width of the donut or pmap
-rlcolor	rgb(127,0,0)	regression line color
-textsize	1.5	text size
-xlabrot	0	xlabel rotation (deg.)
-vcolor	rgb(127,0,0)	value color
-volop	50	volume opacity %



dchart options "file"



dchart -left=10 -right=30 -top=35 -bottom=20 "test.d"



dchart -left=55 -right=85 -top=35 -bottom=20 -bar=f -line "test.d"



My text  
(x,y)

legend "text" x y size font color

■ Item on the chart

■ *Thing*

legend "Item on the chart" 20 30 3 "sans" "red"

legend "Thing" 70 30 2 "serif" "blue"