

1 角

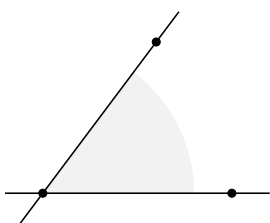
1.1 `\tkzFillAngle`命令：填充角

`\tkzFillAngle[⟨命令选项⟩](⟨A,O,B⟩)`

O 是角顶点， OA 和 OB 是两条边，点的顺序决定角的方向。

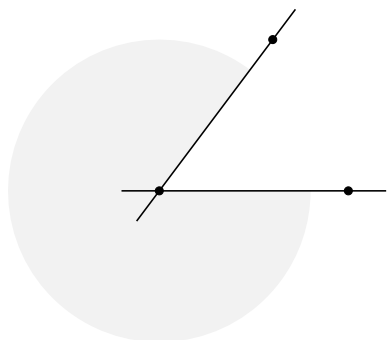
选项	默认值	含义
<code>size</code>	<code>1 cm</code>	着色扇形的半径

可以使用所有有效的 TikZ 样式，如 `fill` 和 `shade` 等。

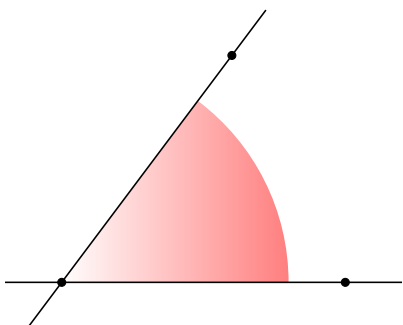
1.1.1 `size`选项示例

```
\begin{tikzpicture}
\tkzInit
\tkzDefPoints{0/0/0,2.5/0/A,1.5/2/B}
\tkzFillAngle[size=2cm, fill=gray!10](A,O,B)
\tkzDrawLines(O,A O,B)
\tkzDrawPoints(O,A,B)
\end{tikzpicture}
```

1.1.2 改变点的顺序示例



```
\begin{tikzpicture}
\tkzInit
\tkzDefPoints{0/0/0,2.5/0/A,1.5/2/B}
\tkzFillAngle[size=2cm,fill=gray!10](B,O,A)
\tkzDrawLines(O,A O,B)
\tkzDrawPoints(O,A,B)
\end{tikzpicture}
```



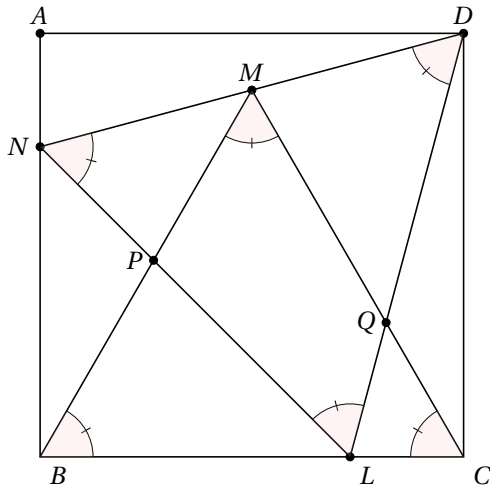
```
\begin{tikzpicture}[scale=0.75]
\tkzInit
\tkzDefPoints{0/0/0,5/0/A,3/4/B}
% Don't forget {} to get, () to use
\tkzFillAngle[size=4cm,left color=white,
               right color=red!50](A,O,B)
\tkzDrawLines(O,A O,B)
\tkzDrawPoints(O,A,B)
\end{tikzpicture}
```

1.2 \tkzFillAngles命令：填充多个角

`\tkzFillAngles[< 命令选项>](\langle A,O,B\rangle)(\langle A',O',B'\rangle)` 等

绘制多个角。

1.2.1 填充多个角示例



```
\begin{tikzpicture}[scale=0.7]
  \tkzDefPoint(0,0){B}
  \tkzDefPoint(8,0){C}
  \tkzDefPoint(0,8){A}
  \tkzDefPoint(8,8){D}
  \tkzDrawPolygon(B,C,D,A)
  \tkzDefTriangle[equilateral](B,C)
  \tkzGetPoint{M}
  \tkzInterLL(D,M)(A,B) \tkzGetPoint{N}
  \tkzDefPointBy[rotation=center N angle -60](D)
  \tkzGetPoint{L}
  \tkzInterLL(N,L)(M,B) \tkzGetPoint{P}
  \tkzInterLL(M,C)(D,L) \tkzGetPoint{Q}
  \tkzDrawSegments(D,N N,L L,D B,M M,C)
  \tkzDrawPoints(L,N,P,Q,M,A,D)
  \tkzLabelPoints[left](N,P,Q)
  \tkzLabelPoints[above](M,A,D)
  \tkzLabelPoints(L,B,C)
  \tkzMarkAngles(C,B,M B,M,C M,C,B
    D,L,N L,N,D N,D,L)
  \tkzFillAngles[fill=red!20,opacity=.2](C,B,M
    B,M,C M,C,B D,L,N L,N,D N,D,L)
\end{tikzpicture}
```

1.3 标记角

在 TikZ 中，绘图选项非常丰富，本宏包又增加了需要的一些标记，它们定义在 `tkz-lib-marks.tex` 文件中，主要的标记有：

`l, ||, |||, z, s, x, o, oo`

它们的定义如下：

```
\pgfdeclareplotmark{||}
  %double bar
  {%
    \pgfpathmoveto{\pgfqpoint{2\pgflinewidth}{\pgfplotmarksizex}}
    \pgfpathlineto{\pgfqpoint{2\pgflinewidth}{-\pgfplotmarksizex}}
    \pgfpathmoveto{\pgfqpoint{-2\pgflinewidth}{\pgfplotmarksizex}}
    \pgfpathlineto{\pgfqpoint{-2\pgflinewidth}{-\pgfplotmarksizex}}
    \pgfusepathqstroke
  }
```

```

%triple bar
\pgfdeclareplotmark{|||}
{%
  \pgfpathmoveto{\pgfqpoint{0 pt}{\pgfplotmarksizesize}}
  \pgfpathlineto{\pgfqpoint{0 pt}{-\pgfplotmarksizesize}}
  \pgfpathmoveto{\pgfqpoint{-3\pgflinewidth}{\pgfplotmarksizesize}}
  \pgfpathlineto{\pgfqpoint{-3\pgflinewidth}{-\pgfplotmarksizesize}}
  \pgfpathmoveto{\pgfqpoint{3\pgflinewidth}{\pgfplotmarksizesize}}
  \pgfpathlineto{\pgfqpoint{3\pgflinewidth}{-\pgfplotmarksizesize}}
  \pgfusepathqstroke
}

% An bar slant
\pgfdeclareplotmark{s|}
{%
  \pgfpathmoveto{\pgfqpoint{-.70710678\pgfplotmarksizesize}%
                    {-.70710678\pgfplotmarksizesize}}
  \pgfpathlineto{\pgfqpoint{.70710678\pgfplotmarksizesize}%
                    {.70710678\pgfplotmarksizesize}}
  \pgfusepathqstroke
}

% An double bar slant
\pgfdeclareplotmark{s||}
{%
  \pgfpathmoveto{\pgfqpoint{-0.75\pgfplotmarksizesize}{-\pgfplotmarksizesize}}
  \pgfpathlineto{\pgfqpoint{0.25\pgfplotmarksizesize}{\pgfplotmarksizesize}}
  \pgfpathmoveto{\pgfqpoint{0\pgfplotmarksizesize}{-\pgfplotmarksizesize}}
  \pgfpathlineto{\pgfqpoint{1\pgfplotmarksizesize}{\pgfplotmarksizesize}}
  \pgfusepathqstroke
}

% z
\pgfdeclareplotmark{z}
{%
  \pgfpathmoveto{\pgfqpoint{0.75\pgfplotmarksizesize}{-\pgfplotmarksizesize}}
  \pgfpathlineto{\pgfqpoint{-0.75\pgfplotmarksizesize}{-\pgfplotmarksizesize}}
  \pgfpathlineto{\pgfqpoint{0.75\pgfplotmarksizesize}{\pgfplotmarksizesize}}
  \pgfpathlineto{\pgfqpoint{-0.75\pgfplotmarksizesize}{\pgfplotmarksizesize}}
  \pgfusepathqstroke
}

% s
\pgfdeclareplotmark{s}
{%
  \pgfpathmoveto{\pgfqpoint{0pt}{0pt}}
  \pgfpathcurveto
    {\pgfpoint{0pt}{0pt}}
    {\pgfpoint{-\pgfplotmarksizesize}{\pgfplotmarksizesize}}
    {\pgfpoint{\pgfplotmarksizesize}{\pgfplotmarksizesize}}
  \pgfpathmoveto{\pgfqpoint{0pt}{0pt}}
  \pgfpathcurveto
    {\pgfpoint{0pt}{0pt}}
    {\pgfpoint{\pgfplotmarksizesize}{-\pgfplotmarksizesize}}
    {\pgfpoint{-\pgfplotmarksizesize}{-\pgfplotmarksizesize}}
  \pgfusepathqstroke
}

```

```

% infinity
\pgfdeclareplotmark{oo}
{%
  \pgfpathmoveto{\pgfqpoint{0pt}{0pt}}
  \pgfpathcurveto
    {\pgfpoint{0pt}{0pt}}
    {\pgfpoint{.5\pgfplotmarksizesize}{1\pgfplotmarksizesize}}
    {\pgfpoint{\pgfplotmarksizesize}{0pt}}
  \pgfpathmoveto{\pgfqpoint{0pt}{0pt}}
  \pgfpathcurveto
    {\pgfpoint{0pt}{0pt}}
    {\pgfpoint{-.5\pgfplotmarksizesize}{1\pgfplotmarksizesize}}
    {\pgfpoint{-\pgfplotmarksizesize}{0pt}}
  \pgfpathmoveto{\pgfqpoint{0pt}{0pt}}
  \pgfpathcurveto
    {\pgfpoint{0pt}{0pt}}
    {\pgfpoint{.5\pgfplotmarksizesize}{-1\pgfplotmarksizesize}}
    {\pgfpoint{\pgfplotmarksizesize}{0pt}}
  \pgfpathmoveto{\pgfqpoint{0pt}{0pt}}
  \pgfpathcurveto
    {\pgfpoint{0pt}{0pt}}
    {\pgfpoint{-.5\pgfplotmarksizesize}{-1\pgfplotmarksizesize}}
    {\pgfpoint{-\pgfplotmarksizesize}{0pt}}
  \pgfusepathqstroke
}

```

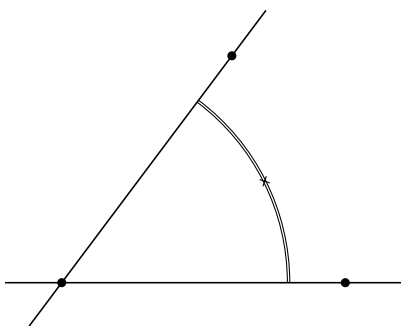
1.4 \tkzMarkAngle命令: 标记角

`\tkzMarkAngle[< 命令选项>](A,0,B)`

O 是顶点, 注意参数需随选项变化。可以使用任意一种标记, 甚至可以绘制一个圆弧, 然后为该圆弧添加标记。圆弧的样式通过 **arc** 选项指定, 圆弧的半径由 **mksize** 选项指定。当然, 也可为圆弧着色。

选项	默认值	含义
arc	1	选择单线、双线或三线样式
size	1 cm	圆弧半径
mark	无	标记类型
mksize	4pt	标记符号尺寸
mkcolor	black	标记符号颜色
mkpos	0.5	标记位置

1.4.1 mark = x 选项示例

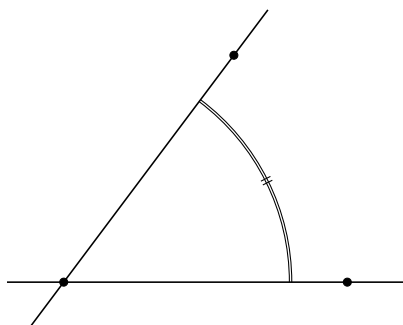


```

\begin{tikzpicture}[scale=.75]
  \tkzDefPoints{0/0/0,5/0/A,3/4/B}
  \tkzMarkAngle[size = 4cm,mark = x,
    arc=11,mkcolor = red](A,0,B)
  \tkzDrawLines(O,A O,B)
  \tkzDrawPoints(O,A,B)
\end{tikzpicture}

```

1.4.2 mark =|| 选项示例



```
\begin{tikzpicture}[scale=.75]
  \tkzDefPoints{0/0/0,5/0/A,3/4/B}
  \tkzMarkAngle[size = 4cm,mark = ||,
    arc=ll,mkcolor = red](A,O,B)
  \tkzDrawLines(0,A 0,B)
  \tkzDrawPoints(0,A,B)
\end{tikzpicture}
```

1.5 \tkzMarkAngles 命令：标记多个角

`\tkzMarkAngles[< 命令选项>](\langle A,O,B\rangle)(\langle A',O',B'\rangle)` 等

对于具有相同选项的多个标记，可以一次标记多个角。

1.6 \tkzLabelAngle 命令：标注角

`\tkzLabelAngle[< 命令选项>](\langle A,O,B\rangle)`

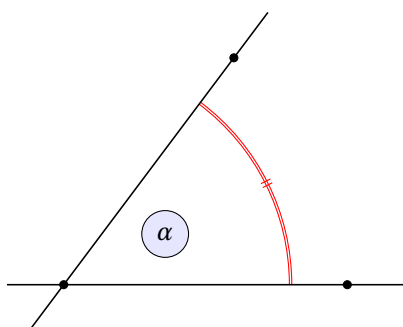
该命令只有一个 `dist` 选项 (带或不带单位)，该选项可以被 TikZ 的选项 (不带单位) 替代，默认情况下，其单位是 `cm`。

选项	默认值	含义
----	-----	----

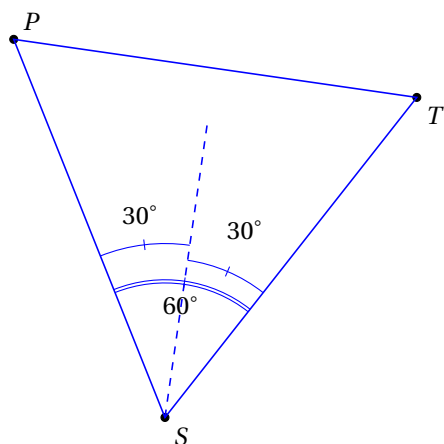
<code>pos</code>	<code>1</code>	或是 <code>dist</code> ，用于控制标注的距离
------------------	----------------	---------------------------------

可以使用 TikZ 的 `rotate`、`shift`、`below` 等选项调整标注的位置。

1.6.1 pos 选项示例



```
\begin{tikzpicture}[scale=.75]
  \tkzDefPoints{0/0/0,5/0/A,3/4/B}
  \tkzMarkAngle[size = 4cm,mark = ||,
    arc=ll,color = red](A,O,B)%
  \tkzDrawLines(0,A 0,B)
  \tkzDrawPoints(0,A,B)
  \tkzLabelAngle[pos=2,draw,circle,
    fill=blue!10](A,O,B){$\alpha$}
\end{tikzpicture}
```



```
\begin{tikzpicture}[rotate=30]
  \tkzDefPoint(2,1){S}
  \tkzDefPoint(7,3){T}
  \tkzDefPointBy[rotation=center S angle 60](T)
  \tkzGetPoint{P}
  \tkzDefLine[bisector, normed](T,S,P)
  \tkzGetPoint{s}
  \tkzDrawPoints(S,T,P)
  \tkzDrawPolygon[color=blue](S,T,P)
  \tkzDrawLine[dashed,color=blue,add=0 and 3](S,s)
  \tkzLabelPoint[above right](P){$P$}
  \tkzLabelPoints(S,T)
  \tkzMarkAngle[size = 1.8cm,mark = |,arc=11,
    color = blue](T,S,P)
  \tkzMarkAngle[size = 2.1cm,mark = |,arc=1,
    color = blue](T,S,s)
  \tkzMarkAngle[size = 2.3cm,mark = |,arc=1,
    color = blue](s,S,P)
  \tkzLabelAngle[pos = 1.5](T,S,P){$60^\circ$}%
  \tkzLabelAngles[pos = 2.7](T,S,s s,S,P){$30^\circ$}%
\end{tikzpicture}
```

1.7 \tkzLabeAngles命令：标注多个角

`\tkzLabelAngles[< 命令选项>](A,O,B)(A',O',B')` 等

当选项相同时，可以用该命令为多个角度添加标注。

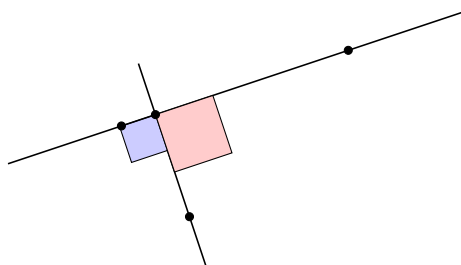
1.8 \tkzMarkRightAngle命令：标记直角

`\tkzMarkRightAngle[< 命令选项>](A,O,B)`

german选项用于改变样式，**size**选项用于改变尺寸。

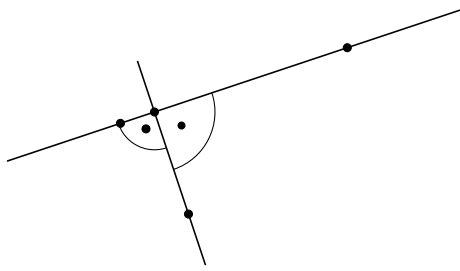
选项	默认值	含义
german	normal	带内点的圆弧
size	0.2	标记边的尺寸

1.8.1 直角标记示例



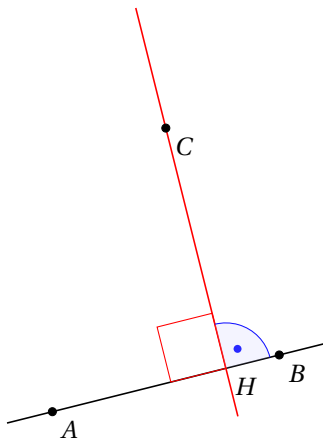
```
\begin{tikzpicture}
  \tkzDefPoints{0/0/A,3/1/B,0.9/-1.2/P}
  \tkzDefPointBy[projection = onto B--A](P)
  \tkzGetPoint{H}
  \tkzDrawLines[add=.5 and .5](P,H)
  \tkzMarkRightAngle[fill=blue!20,size=.5,draw](A,H,P)
  \tkzDrawLines[add=.5 and .5](A,B)
  \tkzMarkRightAngle[fill=red!20,size=.8](B,H,P)
  \tkzDrawPoints(A,B,P,H)
\end{tikzpicture}
```

1.8.2 使用 `german` 样式添加直角标记



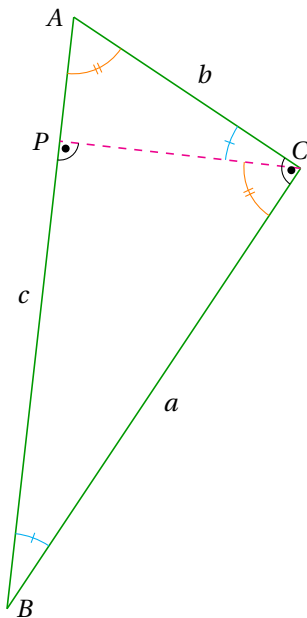
```
\begin{tikzpicture}
\tkzDefPoints{0/0/A,3/1/B,0.9/-1.2/P}
\tkzDefPointBy[projection = onto B--A] (P)
\tkzGetPoint{H}
\tkzDrawLines[add=.5 and .5] (P,H)
\tkzMarkRightAngle[german,size=.5,draw] (A,H,P)
\tkzDrawPoints[] (A,B,P,H)
\tkzDrawLines[add=.5 and .5,fill=blue!20] (A,B)
\tkzMarkRightAngle[german,size=.8] (P,H,B)
\end{tikzpicture}
```

1.8.3 混合样式



```
\begin{tikzpicture}[scale=0.75]
\tkzDefPoint(0,0){A}
\tkzDefPoint(4,1){B}
\tkzDefPoint(2,5){C}
\tkzDefPointBy[projection=onto B--A] (C)
\tkzGetPoint{H}
\tkzDrawLine(A,B)
\tkzDrawLine[add = .5 and .2,color=red] (C,H)
\tkzMarkRightAngle[,size=1,color=red] (C,H,A)
\tkzMarkRightAngle[german,size=.8,color=blue] (B,H,C)
\tkzFillAngle[opacity=.2,fill=blue!20,size=.8] (B,H,C)
\tkzLabelPoints(A,B,C,H)
\tkzDrawPoints(A,B,C)
\end{tikzpicture}
```

1.8.4 完整示例



```
\begin{tikzpicture}[rotate=-90]
\tkzDefPoint(0,1){A}
\tkzDefPoint(2,4){C}
\tkzDefPointWith[orthogonal normed,K=7] (C,A)
\tkzGetPoint{B}
\tkzDrawSegment[green!60!black] (A,C)
\tkzDrawSegment[green!60!black] (C,B)
\tkzDrawSegment[green!60!black] (B,A)
\tkzDrawLine[altitude,dashed,color=magenta] (B,C,A)
\tkzGetPoint{P}
\tkzLabelPoint[left] (A){$A$}
\tkzLabelPoint[right] (B){$B$}
\tkzLabelPoint[above] (C){$C$}
\tkzLabelPoint[left] (P){$P$}
\tkzLabelSegment[auto] (B,A){$c$}
\tkzLabelSegment[auto,swap] (B,C){$a$}
\tkzLabelSegment[auto,swap] (C,A){$b$}
\tkzMarkAngle[size=1cm,color=cyan,mark=|] (C,B,A)
\tkzMarkAngle[size=1cm,color=cyan,mark=|] (A,C,P)
\tkzMarkAngle[size=0.75cm,color=orange,mark=||] (P,C,B)
\tkzMarkAngle[size=0.75cm,color=orange,mark=||] (B,A,C)
\tkzMarkRightAngle[german] (A,C,B)
\tkzMarkRightAngle[german] (B,P,C)
\end{tikzpicture}
```

1.9 \tkzMarkRightAngles命令：标记多个直角

`\tkzMarkRightAngles[< 命令选项>](\langle A,O,B\rangle)(\langle A',O',B'\rangle)` 等

当选项相同时，使用该命令标记多个直角。

2 角度测量命令

2.1 \tkzGetAngle命令：计算角度

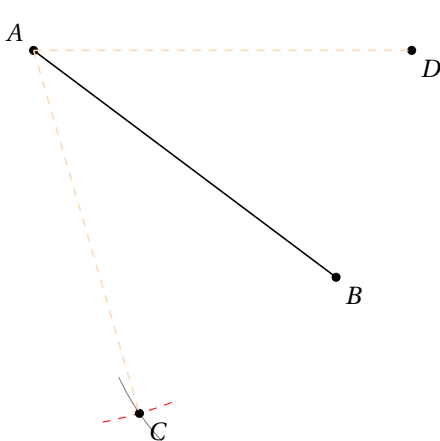
`\tkzGetAngle(< 宏名称>)`

将角度值以度为单位存入指定宏，可用`\tkzAngleResult`命令得到角度值并存入指定宏。

参数	样例	含义
宏名称	<code>\tkzGetAngle{ang}</code>	<code>\ang</code> 保存了角度值（度）

2.1.1 \tkzGetAngle命令示例

直线 (AB) 是角 \widehat{CAD} 的角平分线，因此 AD 的斜率为0，得到 (AB) 的斜率后将其旋转2次。



```
\begin{tikzpicture}
\tkzInit
\tkzDefPoint(1,5){A} \tkzDefPoint(5,2){B}
\tkzDrawSegment(A,B)
\tkzFindSlopeAngle(A,B) \tkzGetAngle{tkzang}
\tkzDefPointBy[rotation= center A angle \tkzang](B)
\tkzGetPoint{C}
\tkzDefPointBy[rotation= center A angle - \tkzang](B)
\tkzGetPoint{D}
\tkzCompass[length=1,dashed,color=red](A,C)
\tkzCompass[delta=10,brown](B,C)
\tkzDrawPoints(A,B,C,D)
\tkzLabelPoints(B,C,D)
\tkzLabelPoints[above left](A)
\tkzDrawSegments[style=dashed,color=orange!30](A,C A,D)
\end{tikzpicture}
```

2.2 \tkzFindAngle命令：计算三个点定义的角度

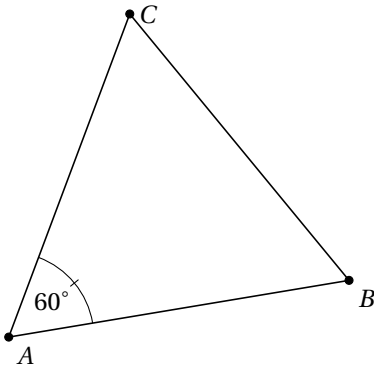
`\tkzFindAngle(<pt1,pt2,pt3>)`

结果保存在`\tkzAngleResult`中。

参数	样例	说明
$(pt1,pt2,pt3)$	<code>\tkzFindAngle(A,B,C)</code>	<code>\tkzAngleResult</code> 是 $(\overrightarrow{BA}, \overrightarrow{BC})$ 之间的角度

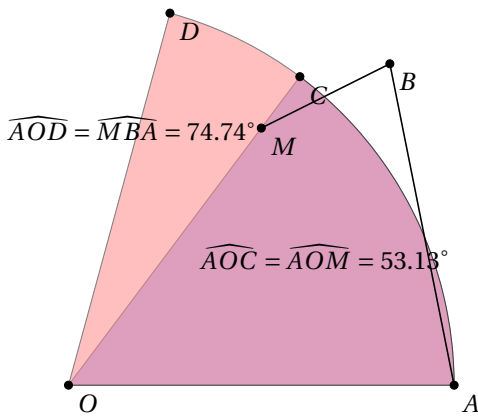
结果在-180 度到 +180 度之间， $pt2$ 是顶点，可以使用`\tkzGetAngle`得到结果。

2.2.1 角度测量示例



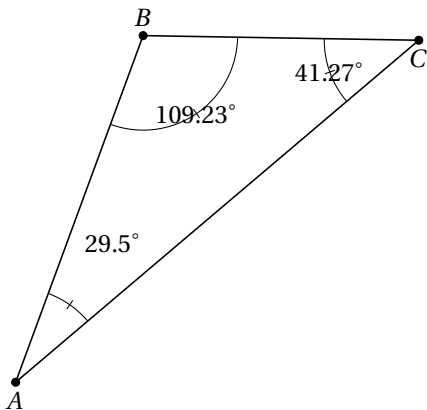
```
\begin{tikzpicture}[scale=.75]
  \tkzDefPoint(-1,1){A} \tkzDefPoint(5,2){B}
  \tkzDefEquilateral(A,B)
  \tkzGetPoint{C}
  \tkzDrawPolygon(A,B,C)
  \tkzFindAngle(B,A,C)
  \tkzGetAngle{angleBAC}
  \edef\angleBAC{\fpeval{round(\angleBAC)}}
  \tkzDrawPoints(A,B,C)
  \tkzLabelPoints(A,B)
  \tkzLabelPoint[right](C){C}
  \tkzLabelAngle(B,A,C){\angleBAC^\circ}
  \tkzMarkAngle[size=1.5cm](B,A,C)
\end{tikzpicture}
```

2.3 角度计算示例



```
\begin{tikzpicture}[scale=0.85]
  \tkzInit[xmin=-1,ymin=-1,xmax=7,ymax=7]
  \tkzClip
  \tkzDefPoint(0,0){O} \tkzDefPoint(6,0){A}
  \tkzDefPoint(5,5){B} \tkzDefPoint(3,4){M}
  \tkzFindAngle(A,O,M) \tkzGetAngle{an}
  \tkzDefPointBy[rotation=center O angle \an](A)
  \tkzGetPoint{C}
  \tkzDrawSector[fill=blue!50,opacity=.5](O,A)(C)
  \tkzFindAngle(M,B,A) \tkzGetAngle{am}
  \tkzDefPointBy[rotation=center O angle \am](A)
  \tkzGetPoint{D}
  \tkzDrawSector[fill=red!50,opacity=.5](O,A)(D)
  \tkzDrawPoints(O,A,B,M,C,D)
  \tkzLabelPoints(O,A,B,M,C,D)
  \edef\an{\fpeval{round(\an,2)}} \edef\am{\fpeval{round(\am,2)}}
  \tkzDrawSegments(M,B B,A)
  \tkzText(4,2){\widehat{AOC}=\widehat{AOM}=\an^\circ}
  \tkzText(1,4){\widehat{AOD}=\widehat{MBA}=\am^\circ}
\end{tikzpicture}
```

2.3.1 三角形内角计算示例



```
\begin{tikzpicture}[scale=1.25,rotate=30]
\tkzDefPoints{0.5/1.5/A, 3.5/4/B, 6/2.5/C}
\tkzDrawPolygon(A,B,C)
\tkzDrawPoints(A,B,C)
\tkzLabelPoints[below](A,C)
\tkzLabelPoints[above](B)
\tkzMarkAngle[size=1cm](B,C,A)
\tkzFindAngle(B,C,A)\tkzGetAngle{angleBCA}
\edef\angleBCA{\fpeval{round(\angleBCA,2)}}
\tkzLabelAngle[pos = 1](B,C,A){$\angle BCA^{\circ}$}
\tkzMarkAngle[size=1cm](C,A,B)
\tkzFindAngle(C,A,B)\tkzGetAngle{angleBAC}
\edef\angleBAC{\fpeval{round(\angleBAC,2)}}
\tkzLabelAngle[pos = 1.8](C,A,B){$\angle BAC^{\circ}$}
\tkzMarkAngle[size=1cm](A,B,C)
\tkzFindAngle(A,B,C)\tkzGetAngle{angleABC}
\edef\angleABC{\fpeval{round(\angleABC,2)}}
\tkzLabelAngle[pos = 1](A,B,C){$\angle ABC^{\circ}$}
\end{tikzpicture}
```

2.4 \tkzFindSlope命令：计算斜率

斜率由直线上两个点确定，该命令不检测其存在性。

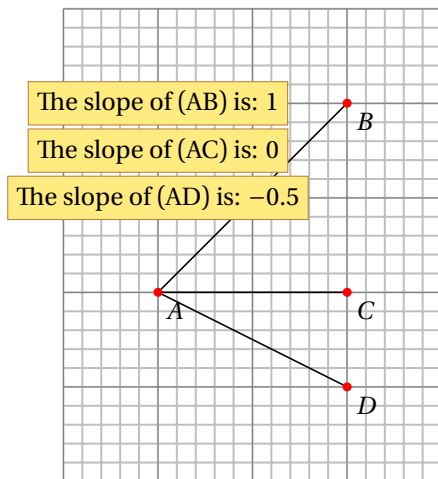
\tkzFindSlope(*pt1,pt2*){*宏名称*}

斜率保存在指定宏中。

参数	样例	说明
(pt1,pt2)pt3 计算	<code>\tkzFindSlope(A,B){slope}</code>	<code>\slope</code> 通过 $\frac{y_B - y_A}{x_B - x_A}$



当 $x_B = x_A$ 时，没有斜率。



```
\begin{tikzpicture}[scale=1.25]
\tkzInit[xmax=4,ymax=5]\tkzGrid[sub]
\tkzDefPoint(1,2){A} \tkzDefPoint(3,4){B}
\tkzDefPoint(3,2){C} \tkzDefPoint(3,1){D}
\tkzDrawSegments(A,B A,C A,D)
\tkzDrawPoints[color=red](A,B,C,D)
\tkzLabelPoints(A,B,C,D)
\tkzFindSlope(A,B){SAB} \tkzFindSlope(A,C){SAC}
\tkzFindSlope(A,D){SAD}
\pgfkeys{/pgf/number format/.cd,fixed,precision=2}
\tkzText[fill=Gold!50,draw=brown](1,4)%
{The slope of (AB) is: $\pgfmathprintnumber{\SAB}$}
\tkzText[fill=Gold!50,draw=brown](1,3.5)%
{The slope of (AC) is: $\pgfmathprintnumber{\SAC}$}
\tkzText[fill=Gold!50,draw=brown](1,3)%
{The slope of (AD) is: $\pgfmathprintnumber{\SAD}$}
\end{tikzpicture}
```

2.5 \tkzFindSlopeAngle命令：计算直线与横轴夹角

结果在-180 度与 +180 度之间。

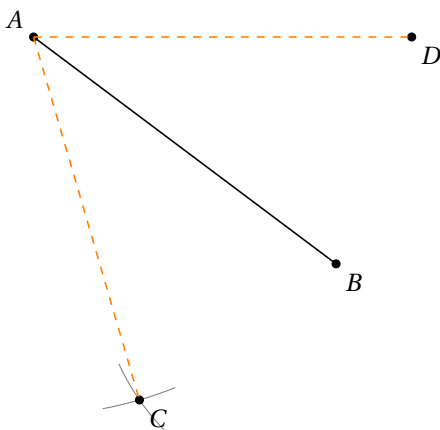
\tkzFindSlopeAngle(*A,B*)

计算直线 (AB) 的斜率并保存在 **\tkzAngleResult** 命令中。

参数	样例	说明
(pt1,pt2)	\tkzFindSlopeAngle(A,B)	

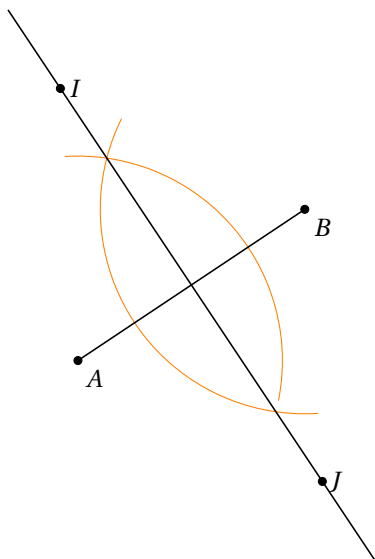
用 **\tkzGetAngle** 保存结果并命名

2.5.1 折叠示例



```
\begin{tikzpicture}
\tkzDefPoint(1,5){A}
\tkzDefPoint(5,2){B}
\tkzDrawSegment(A,B)
\tkzFindSlopeAngle(A,B)
\tkzGetAngle{\tkzang}
\tkzDefPointBy[rotation=center A angle \tkzang](B)
\tkzGetPoint{C}
\tkzDefPointBy[rotation=center A angle - \tkzang](B)
\tkzGetPoint{D}
\tkzCompass[orange,length=1](A,C)
\tkzCompass[orange,delta=10](B,C)
\tkzDrawPoints(A,B,C,D)
\tkzLabelPoints(B,C,D)
\tkzLabelPoints[above left](A)
\tkzDrawSegments[style=dashed,color=orange](A,C A,D)
\end{tikzpicture}
```

2.5.2 中点计算示例



```

\begin{tikzpicture}
  \tkzInit
  \tkzDefPoint(0,0){A}
  \tkzDefPoint(3,2){B}
  \tkzDefLine[mediator](A,B)
  \tkzGetPoints{I}{J}
  \tkzCalcLength[cm](A,B)
  \tkzGetLength{dAB}
  \tkzFindSlopeAngle(A,B)
  \tkzGetAngle{tkzangle}
  \begin{scope}[rotate=\tkzangle]
    \tikzset{arc/.style={color=gray,delta=10}}
    \tkzDrawArc[orange,R,arc](B,3/4*\dAB)(120,240)
    \tkzDrawArc[orange,R,arc](A,3/4*\dAB)(-45,60)
    \tkzDrawLine(I,J)
    \tkzDrawSegment(A,B)
  \end{scope}
  \tkzDrawPoints(A,B,I,J)
  \tkzLabelPoints(A,B) \tkzLabelPoints[right](I,J)
\end{tikzpicture}

```