tikz 画图

2019 年 9 月 8 日
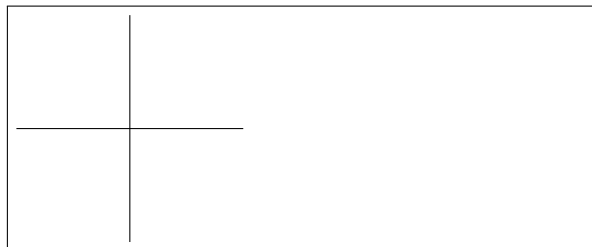
1 简单图形

1.1 直线

```
\begin{tikzpicture}
  \draw (1,0) -- (0,0) -- (0,1);
\end{tikzpicture}
```
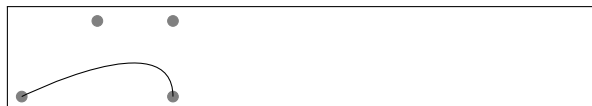
```
\begin{tikzpicture}
  \draw (-1.5,0) -- (1.5,0);
  \draw (0,-1.5) -- (0,1.5);
\end{tikzpicture}
```
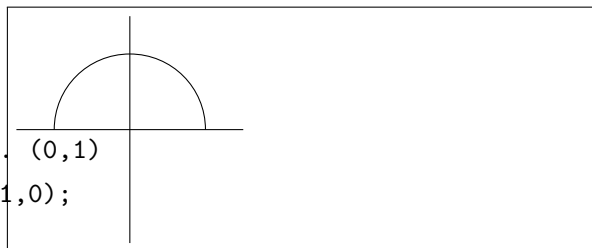
1.2 绘制曲线

```
\begin{tikzpicture}
  \filldraw[gray] (0,0) circle [radius=2pt]
                  (1,1) circle [radius=2pt]
                  (2,1) circle [radius=2pt]
                  (2,0) circle [radius=2pt];
  \draw (0,0) .. controls (0,0) and (2,1) .. (2,0);

\end{tikzpicture}
```

可以通过这种方式画圆:

```
\begin{tikzpicture}
  \draw (-1.5,0) -- (1.5,0);
  \draw (0,-1.5) -- (0,1.5);
  \draw (-1,0) .. controls (-1,0.555) and (-0.555,1) .. (0,1)
                .. controls (0.555,1) and (1,0.555) ..(1,0);
\end{tikzpicture}
```

1.3 绘制圆形

```
\tikz \draw (0,0) circle [radius=10pt];
```
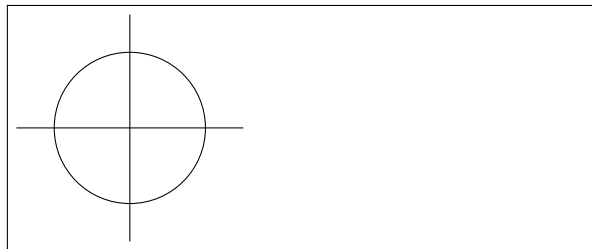
椭圆

```
\tikz \draw (0,0) ellipse [x radius=10pt, y radius=5pt];
```

接下来可以这样画圆形

```
\begin{tikzpicture}
  \draw (-1.5,0) -- (1.5,0);
  \draw (0,-1.5) -- (0,1.5);
  \draw (0,0) circle [radius=1cm];
\end{tikzpicture}
```
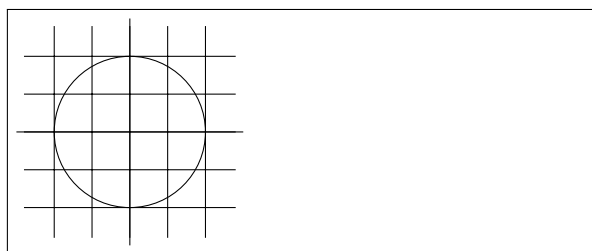
1.4 方形

```
\tikz \draw (-0.5,-0.5) rectangle (-1,-1);
```

1.5 绘制网格

```
\begin{tikzpicture}
  \draw (-1.5,0) -- (1.5,0);
  \draw (0,-1.5) -- (0,1.5);
  \draw (0,0) circle [radius=1cm];
  \draw[step=.5cm] (-1.4,-1.4) grid (1.4, 1.4);
\end{tikzpicture}
```

然后将网格美化成灰色

```
\begin{tikzpicture}
  \draw[step=.5cm, gray, very thin] (-1.4,-1.4) grid (1.4, 1.4);
  \draw (-1.5,0) -- (1.5,0);
  \draw (0,-1.5) -- (0,1.5);
  \draw (0,0) circle [radius=1cm];
\end{tikzpicture}
```