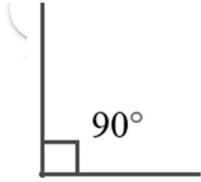


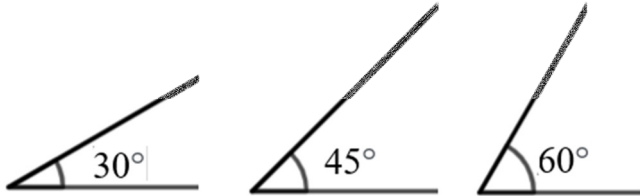
## (07) 角度

### 一、角度

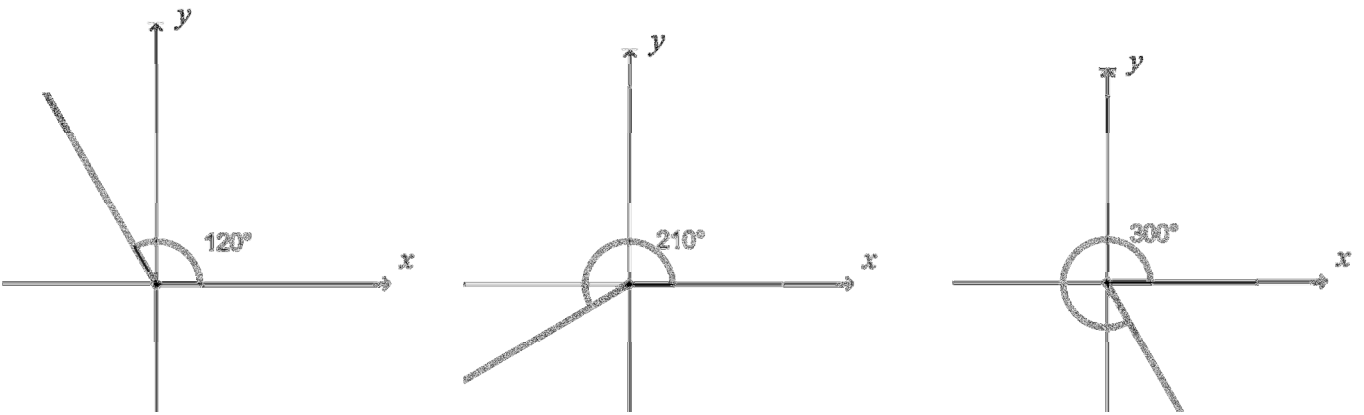
1. 兩條垂直線的交角為  $90^\circ$



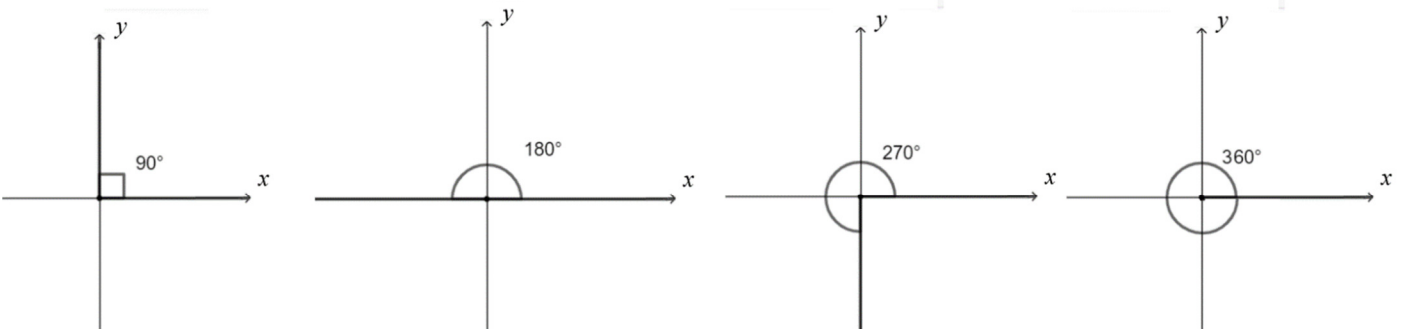
2. 幾個重要的角度  $45^\circ$



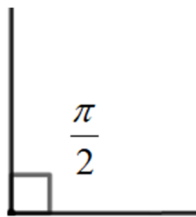
3. 第二、三、四象限的角度



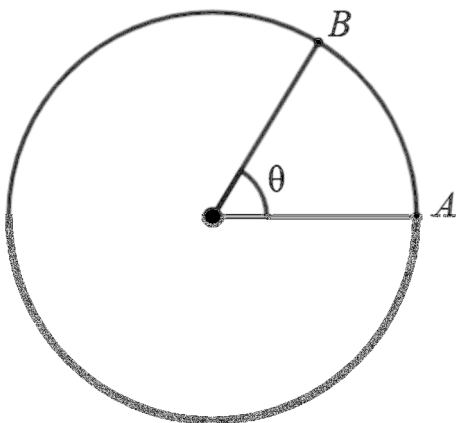
4.



5. 弧度角：直角為 $\frac{\pi}{2}$



為何使用弧度角？與圓有關



$\widehat{AB}$ 的長度與圓心角  $\theta$  和半徑  $r$  的大小成正比。

所以可以表示為 $\widehat{AB} = k\theta r$ ， $k$  為常數

這裡我們將常數  $k$  值當作 1，簡化為 $\widehat{AB} = \theta r$

$$\theta = \frac{\widehat{AB}}{r}$$

當圓心角  $\theta$  為  $360^\circ$ ， $\widehat{AB} = 2\pi r$

$$\theta = \frac{2\pi r}{r} = 2\pi$$

因此，圓心角為  $360^\circ$  時，弧度角是  $2\pi$ 。

一個簡單的記法， $\pi = 180^\circ$

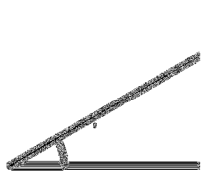
## 6. 第一象限的常用弧度角

$$\frac{\pi}{6} = \frac{180^\circ}{6} = 30^\circ$$

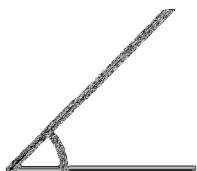
$$\frac{\pi}{4} = \frac{180^\circ}{4} = 45^\circ$$

$$\frac{\pi}{3} = \frac{180^\circ}{3} = 60^\circ$$

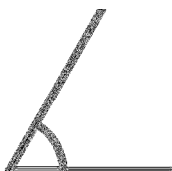
$$\frac{\pi}{2} = \frac{180^\circ}{2} = 90^\circ$$



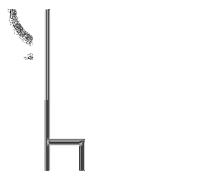
$$\frac{\pi}{6} = 30^\circ$$



$$\frac{\pi}{4} = 45^\circ$$



$$\frac{\pi}{3} = 60^\circ$$



$$\frac{\pi}{2} = 90^\circ$$

