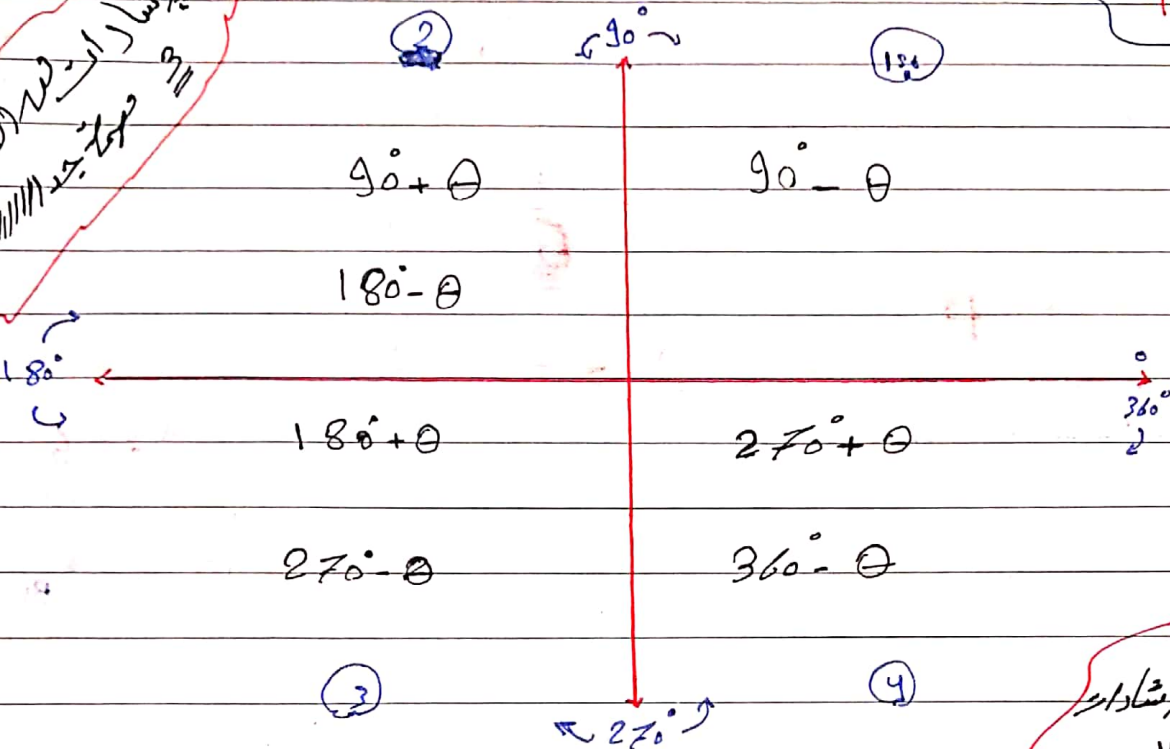


Lesson 4

$$\theta \in]0, 2\pi[$$

$$\pi = 180^\circ$$

الإشارة في الربع
في كل ربع



مثال

$$\sin(90^\circ - \theta) = \cos \theta$$

يحدد / الإشارة
في الربع حسب
الزاوية الأصلية

* Function *

تغير

270°, 90°

$$\tan(270^\circ - \theta) = \cot \theta$$

تبقى

360°, 180°

$$\cos(360^\circ - \theta) = \cos \theta$$

$$\tan(180^\circ + \theta) = \tan \theta$$

Ex

$$\cos 240^\circ = \dots$$

$(180^\circ + 60^\circ) = -\cos 60^\circ = -\frac{1}{2}$

$(270^\circ - 30^\circ) = -\sin 30^\circ = -\frac{1}{2}$

If θ is negative

$$\csc \leftarrow \sin(-\theta) = -\sin \theta$$

$$\sec \leftarrow \cos(-\theta) = \cos \theta$$

$$\cot \leftarrow \tan(-\theta) = -\tan \theta$$

نكمل

$$\begin{aligned} \sin \alpha &= \cos \beta \rightarrow \alpha \pm \beta = \frac{\pi}{2} + 2\pi n \\ \csc \alpha &= \sec \beta \rightarrow \alpha \pm \beta = \frac{\pi}{2} + 2\pi n \\ \tan \alpha &= \cot \beta \rightarrow \alpha \pm \beta = \frac{\pi}{2} + 2\pi n \end{aligned}$$

 $n = 1, 2, 3, \dots$

Lesson 5

Ex

$$\sin \theta = B$$

Shift + function $\rightarrow B \Rightarrow = \rightarrow \boxed{0.99}$

Lesson 5 *

$$y = A \sin(B\theta)$$

$$\text{Range} = [-A, A]$$

$$\text{Period} = \frac{2\pi}{|B|}$$