

TRIGONOMÉTRIE

SÉRIE 5

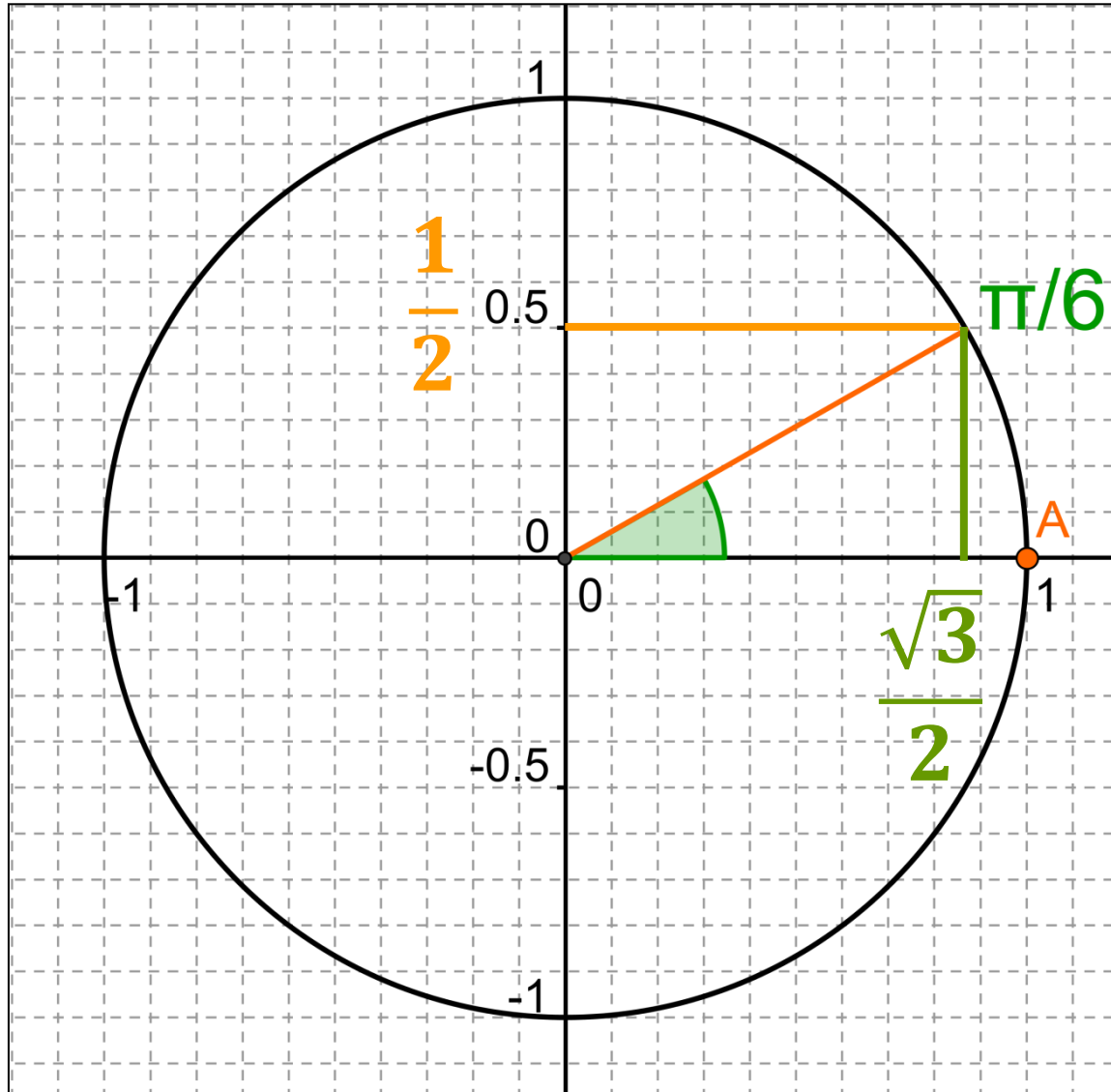
Calcul mental et automatismes – IREM de Clermont-Ferrand

Donner les valeurs
exactes des sinus et cosinus
des réels suivants :

Nº0

$$\frac{\pi}{6}$$

Nº0



$$\cos \frac{\pi}{6} = \frac{\sqrt{3}}{2}$$
$$\sin \frac{\pi}{6} = \frac{1}{2}$$

Nº1

π

—

4

Nº2

$$\frac{\pi}{3}$$

Nº3

$$\frac{3\pi}{2}$$

N^o4

7π

Nº5

$$\frac{2\pi}{3}$$

N°6

$$\frac{5\pi}{6}$$

Nº7

$$-\frac{3\pi}{4}$$

Nº8

$$\frac{7\pi}{6}$$

Nº9

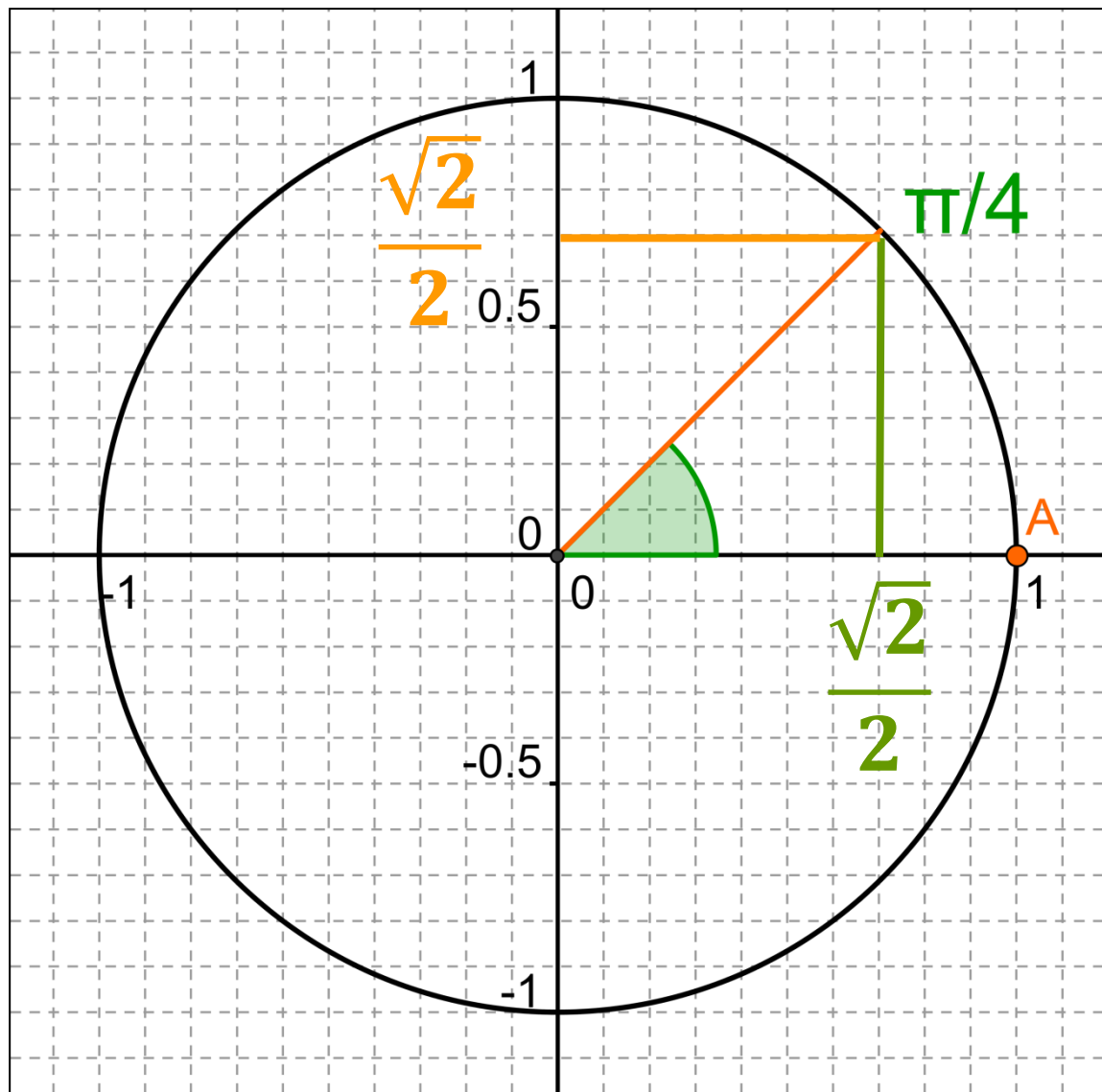
$$-\frac{\pi}{4}$$

Nº10

$$\frac{5\pi}{3}$$

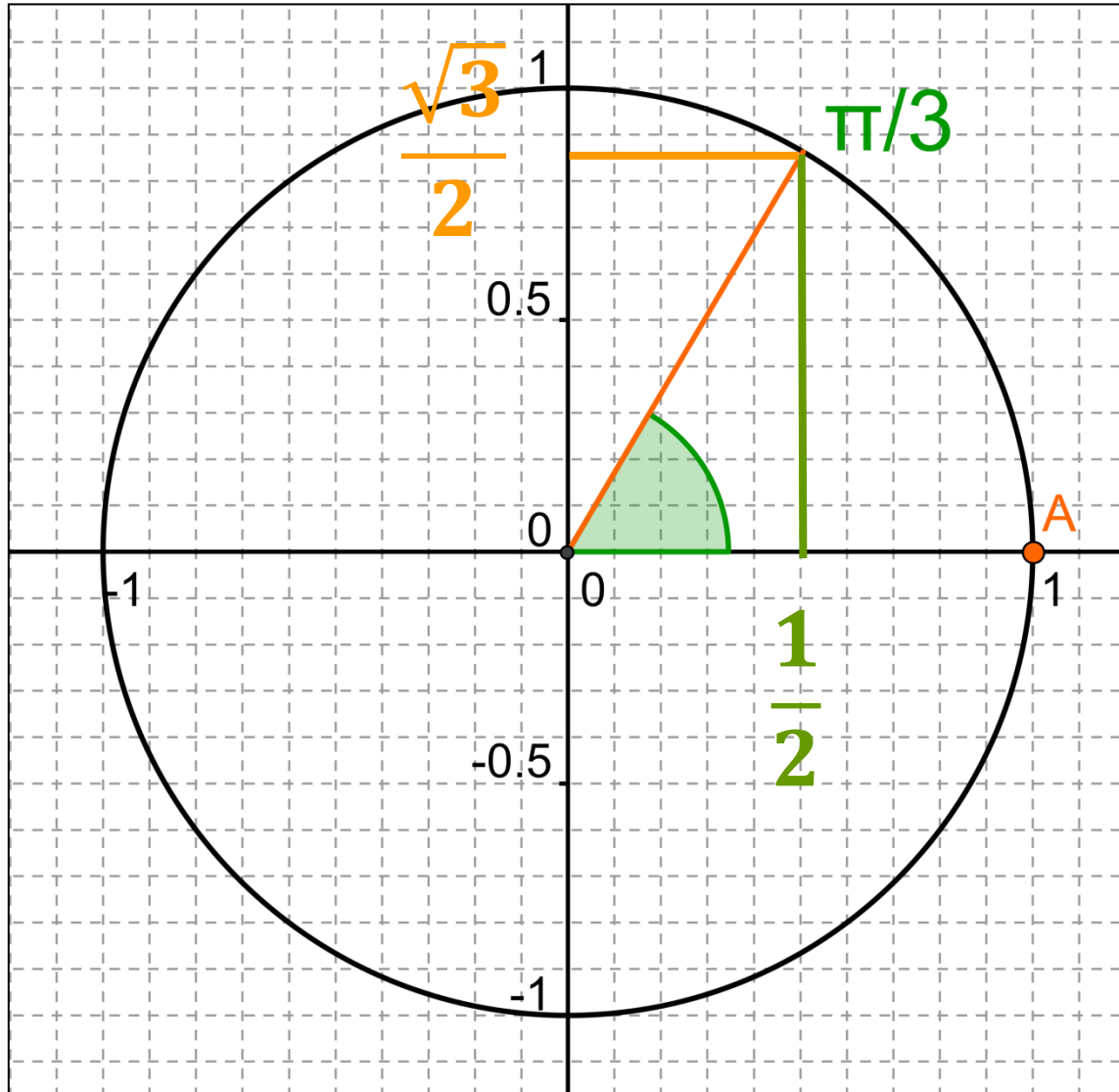
CORRECTION

Nº1



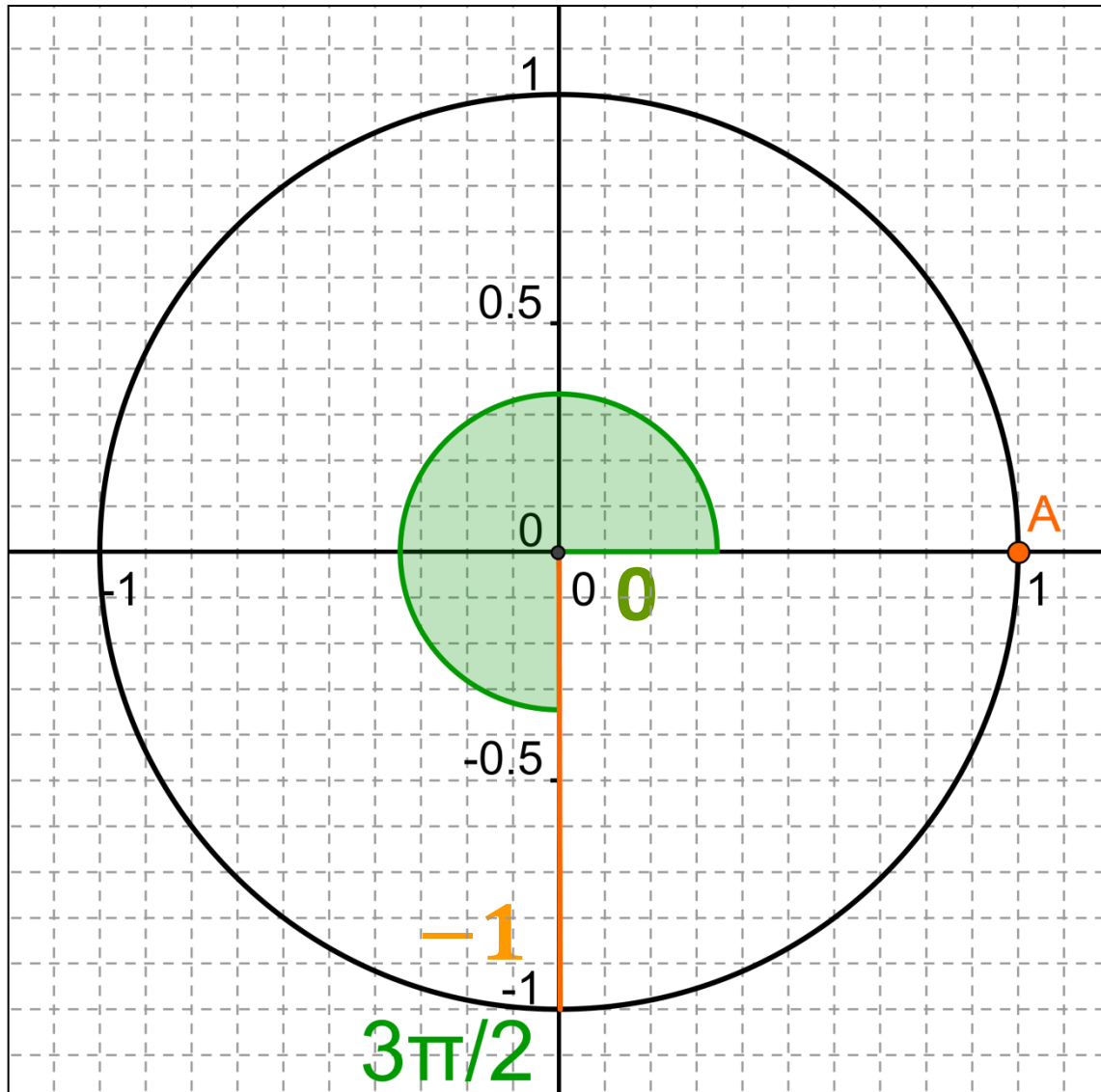
$$\cos \frac{\pi}{4} = \frac{\sqrt{2}}{2}$$
$$\sin \frac{\pi}{4} = \frac{\sqrt{2}}{2}$$

Nº2



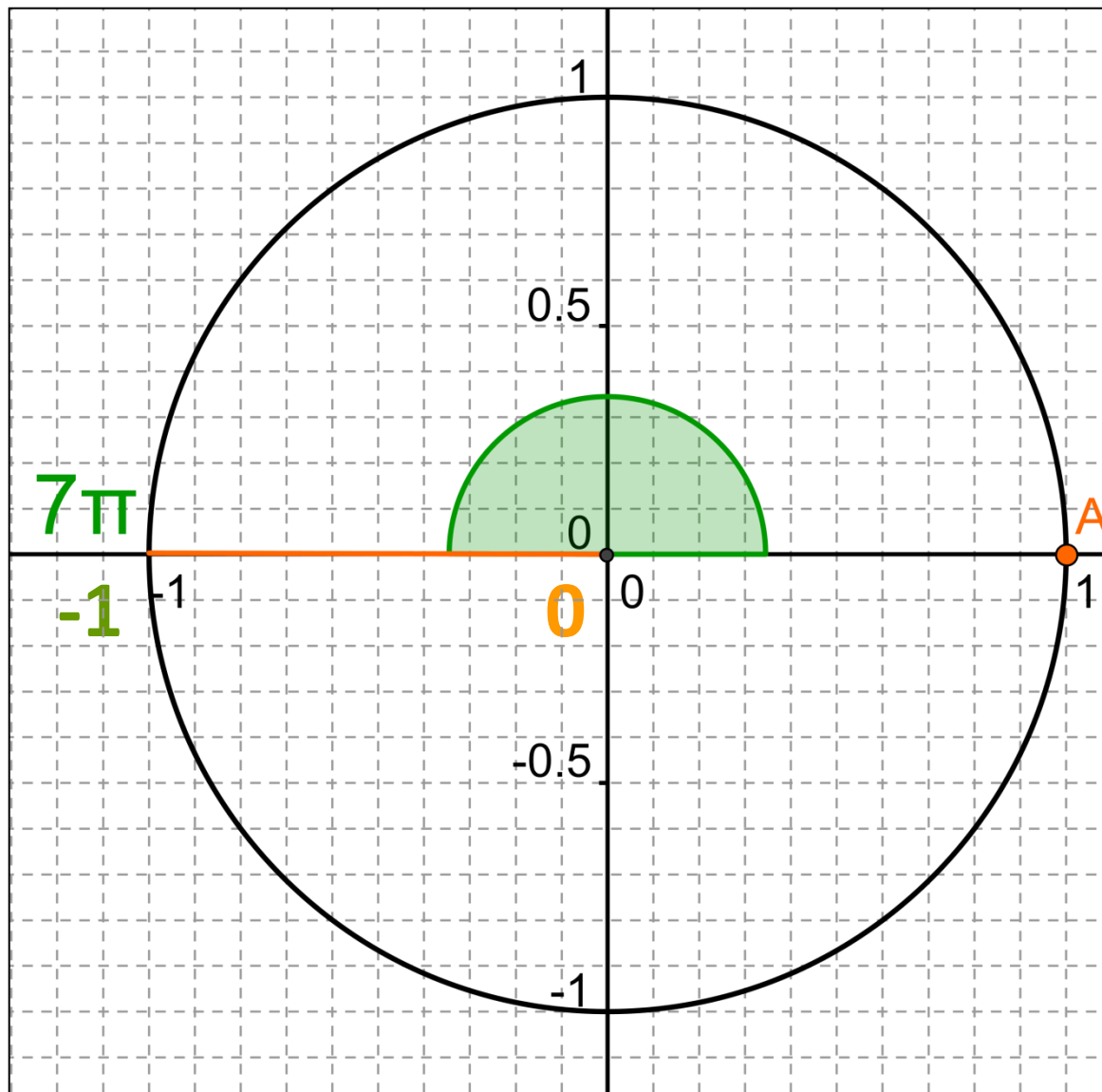
$$\cos \frac{\pi}{3} = \frac{1}{2}$$
$$\sin \frac{\pi}{3} = \frac{\sqrt{3}}{2}$$

Nº3



$$\cos \frac{3\pi}{2} = 0$$
$$\sin \frac{3\pi}{2} = -1$$

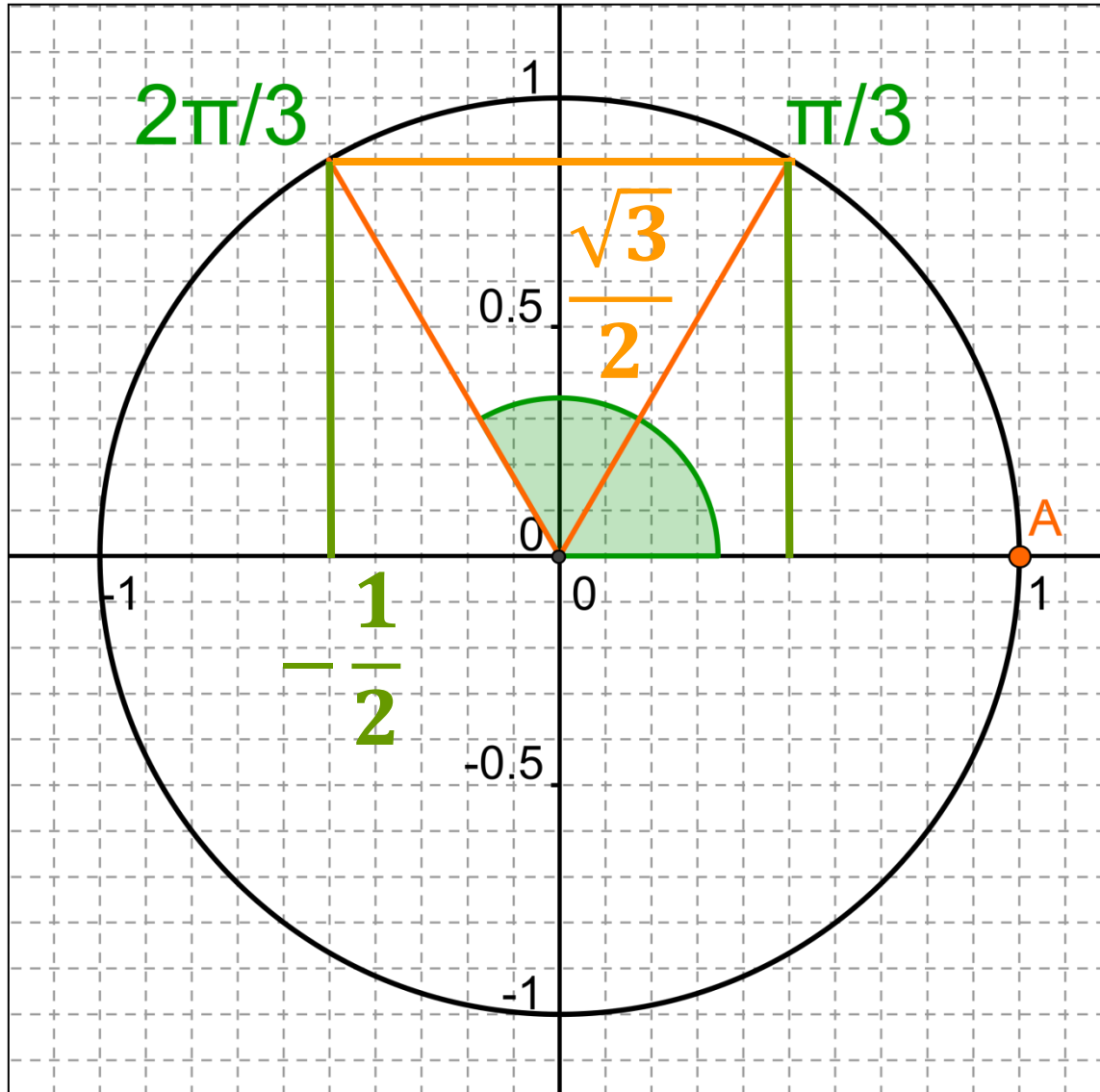
Nº4



$$\cos 7\pi = -1$$

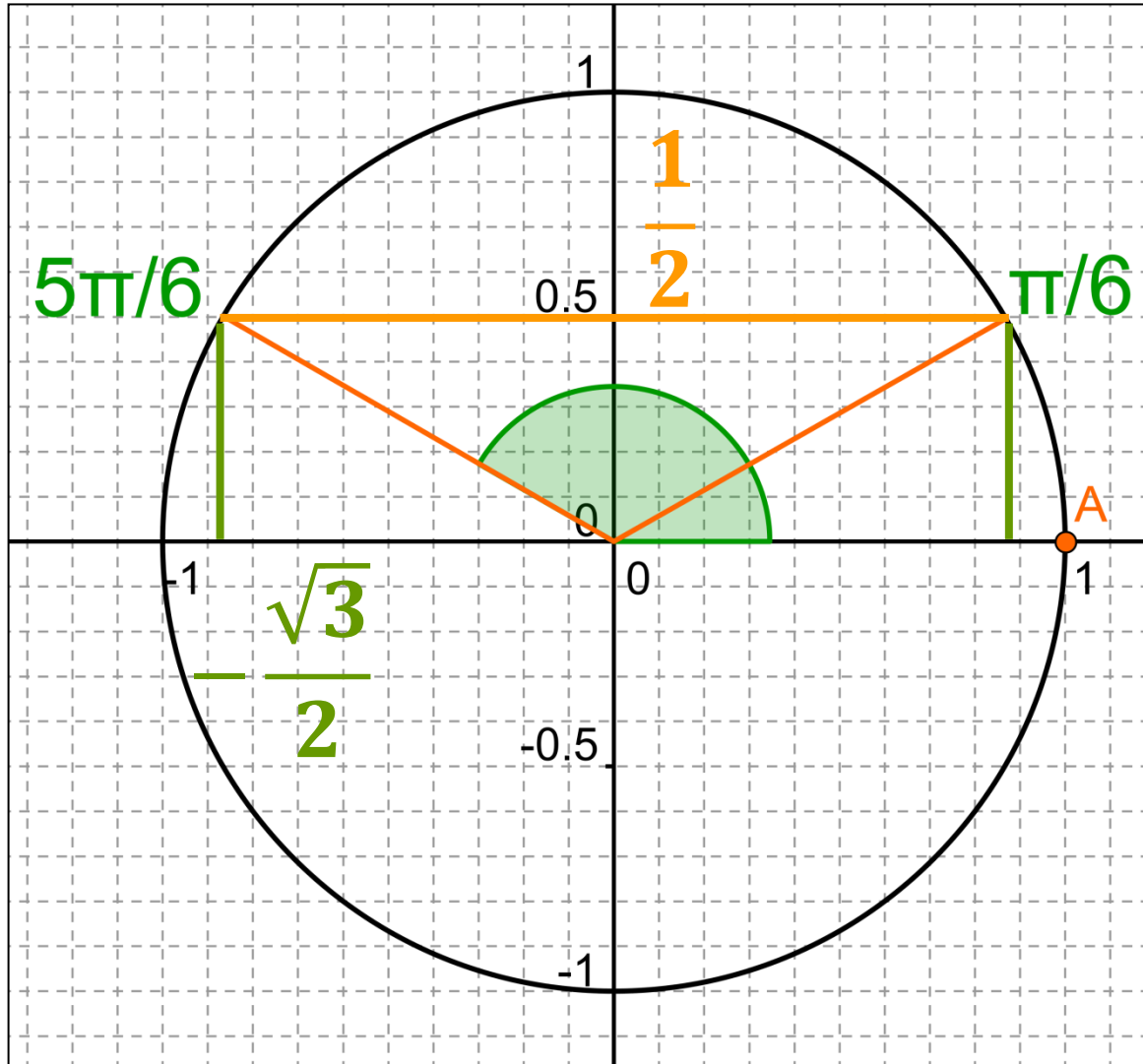
$$\sin 7\pi = 0$$

Nº5



$$\cos \frac{2\pi}{3} = -\frac{1}{2}$$
$$\sin \frac{2\pi}{3} = \frac{\sqrt{3}}{2}$$

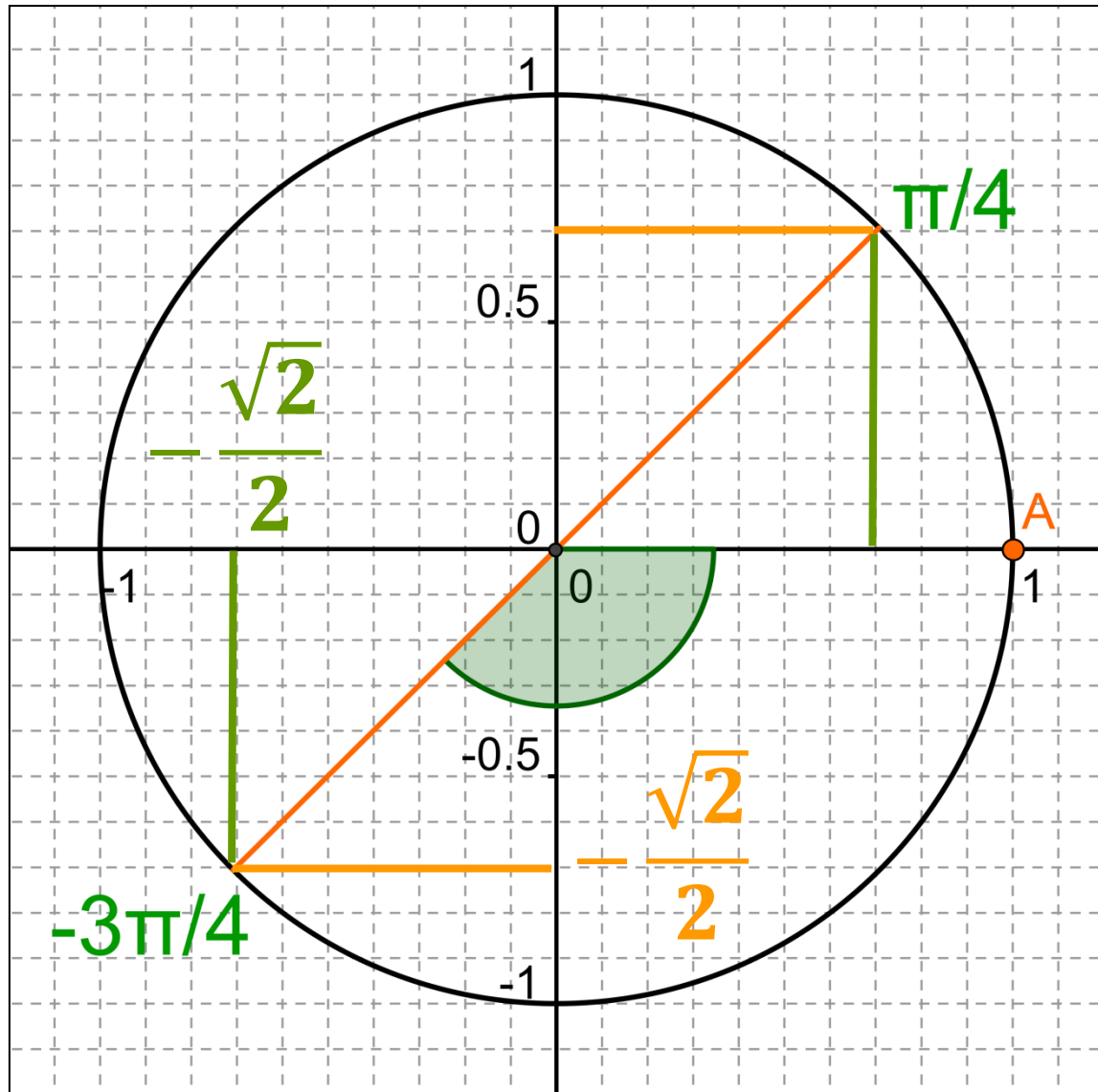
Nº6



$$\cos \frac{5\pi}{6} = -\frac{\sqrt{3}}{2}$$

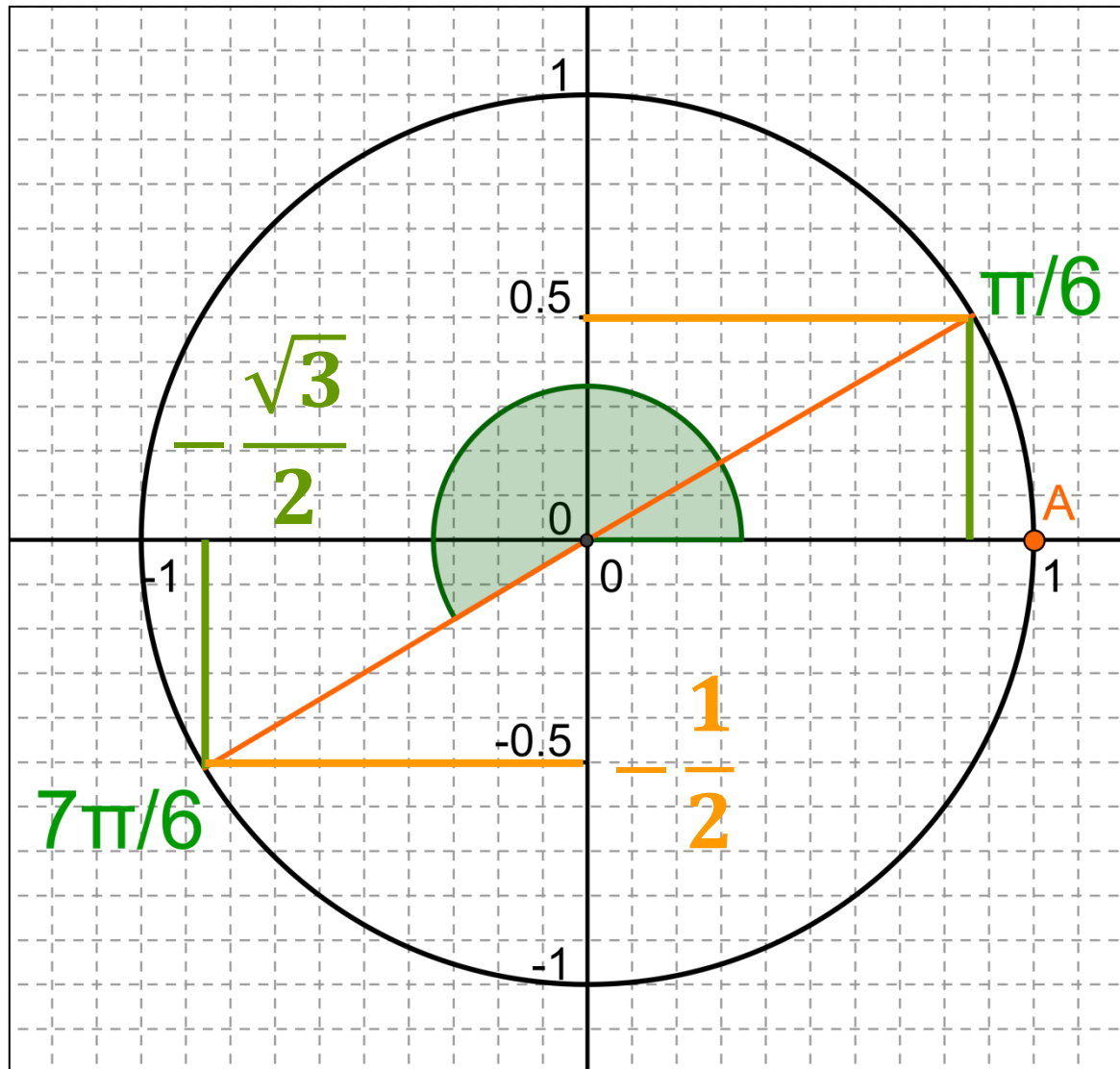
$$\sin \frac{5\pi}{6} = \frac{1}{2}$$

Nº7



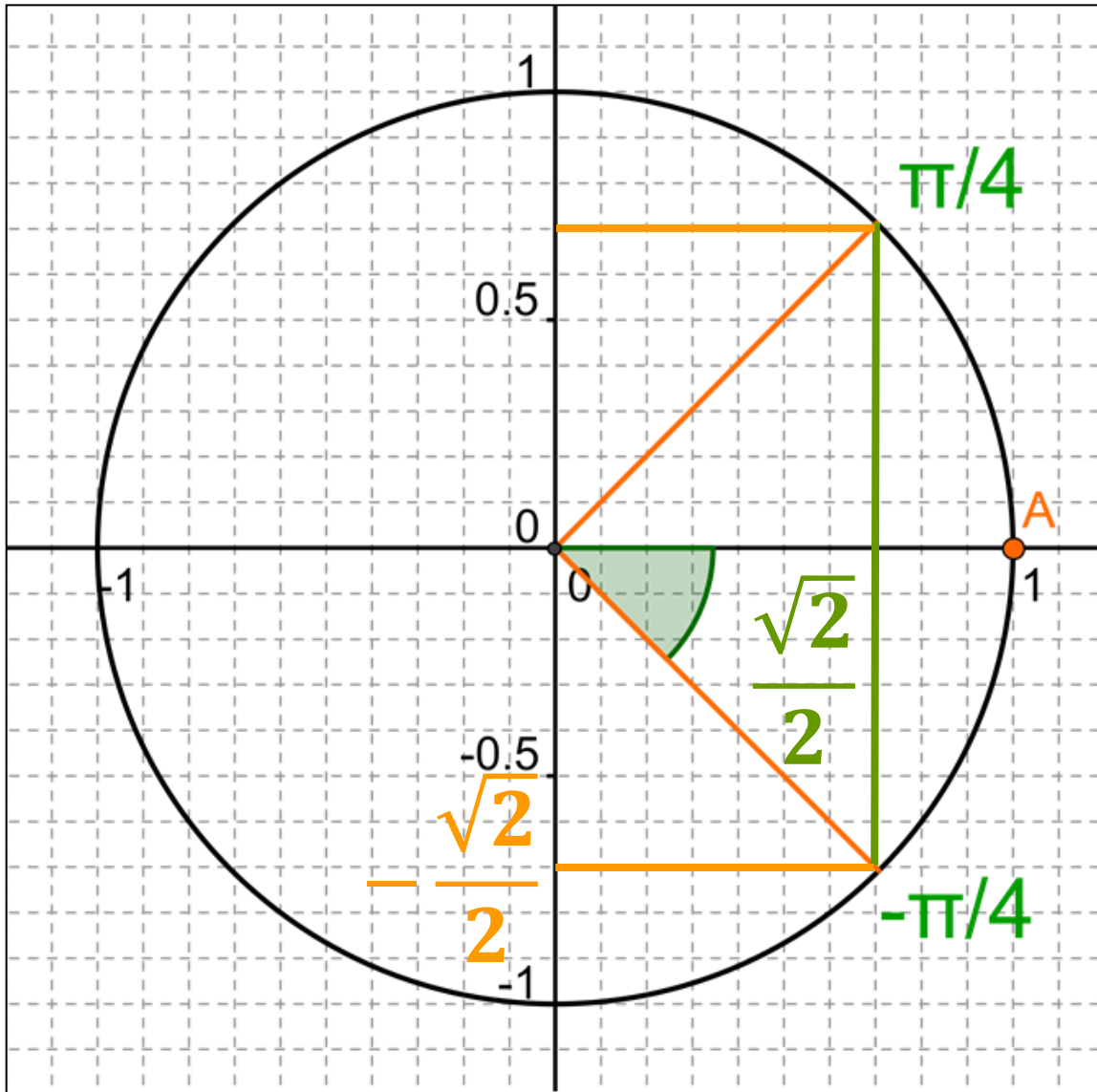
$$\cos\left(-\frac{3\pi}{4}\right) = -\frac{\sqrt{2}}{2}$$
$$\sin\left(-\frac{3\pi}{4}\right) = -\frac{\sqrt{2}}{2}$$

Nº8



$$\cos \frac{7\pi}{6} = -\frac{\sqrt{3}}{2}$$
$$\sin \frac{7\pi}{6} = -\frac{1}{2}$$

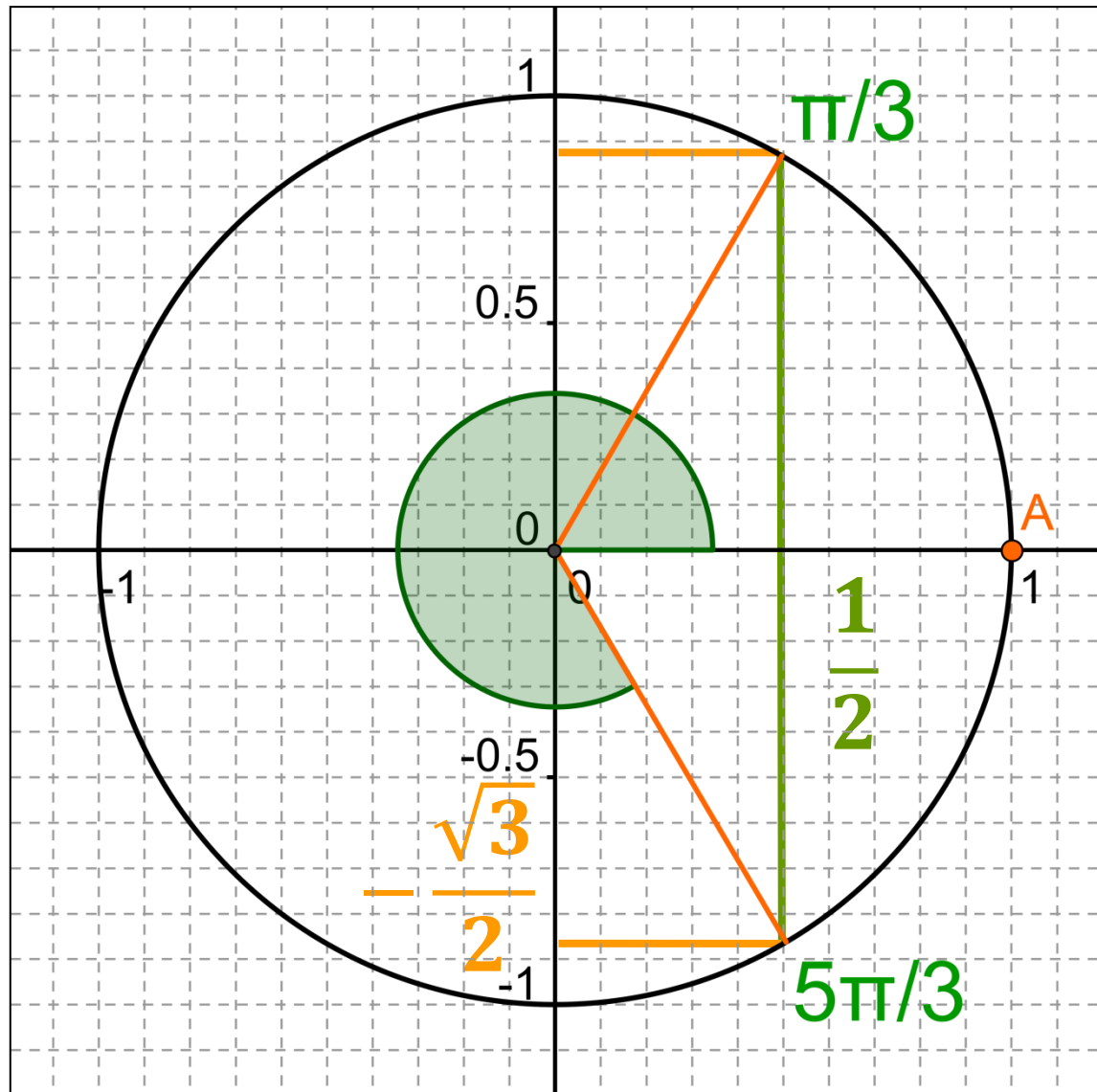
Nº9



$$\cos\left(-\frac{\pi}{4}\right) = \frac{\sqrt{2}}{2}$$

$$\sin\left(-\frac{\pi}{4}\right) = -\frac{\sqrt{2}}{2}$$

Nº10



$$\cos \frac{5\pi}{3} = \frac{1}{2}$$

$$\sin \frac{5\pi}{3} = -\frac{\sqrt{3}}{2}$$

FIN

TRIGONOMÉTRIE

SÉRIE 6

Calcul mental et automatismes – IREM de Clermont-Ferrand

Dans chaque cas,
déterminer le ou les
nombres réels x vérifiant
les conditions :

N°1

$$x \in \left[0; \frac{\pi}{2}\right] \text{ et } \cos x = \frac{1}{2}$$

N°2

$$x \in \left[0; \frac{\pi}{2}\right] \text{ et } \sin x = \frac{\sqrt{2}}{2}$$

N°3

$$x \in \left[\frac{\pi}{2}; \pi \right] \text{ et } \sin x = \frac{\sqrt{2}}{2}$$

N°4

$$x \in [0; \pi] \text{ et } \sin x = \frac{1}{2}$$

N°5

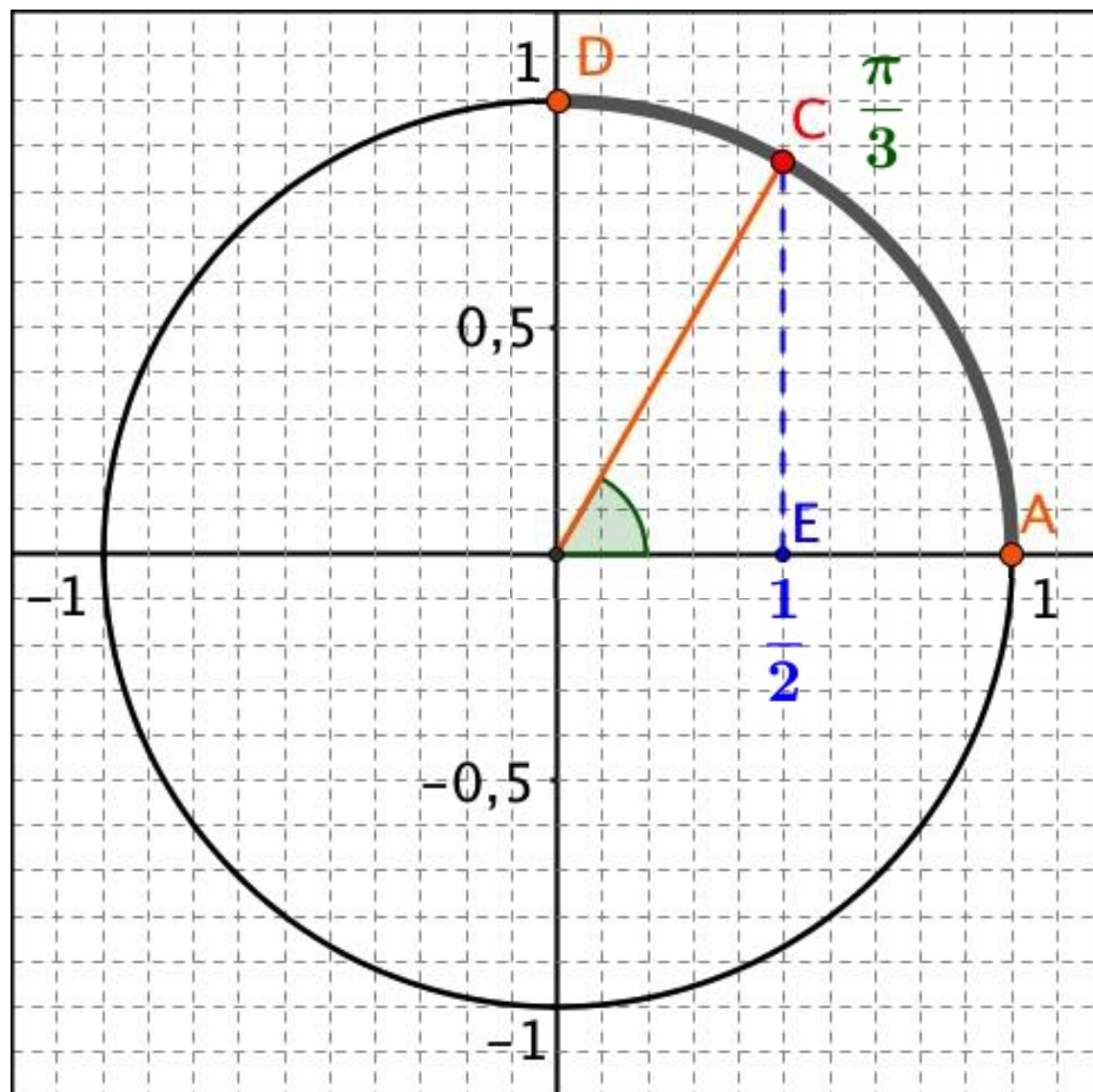
$$x \in [-\pi; 0] \text{ et } \sin x = -\frac{\sqrt{3}}{2}$$

N°6

$$x \in [0; 2\pi] \text{ et } \cos x = -\frac{\sqrt{2}}{2}$$

CORRECTION

Nº1

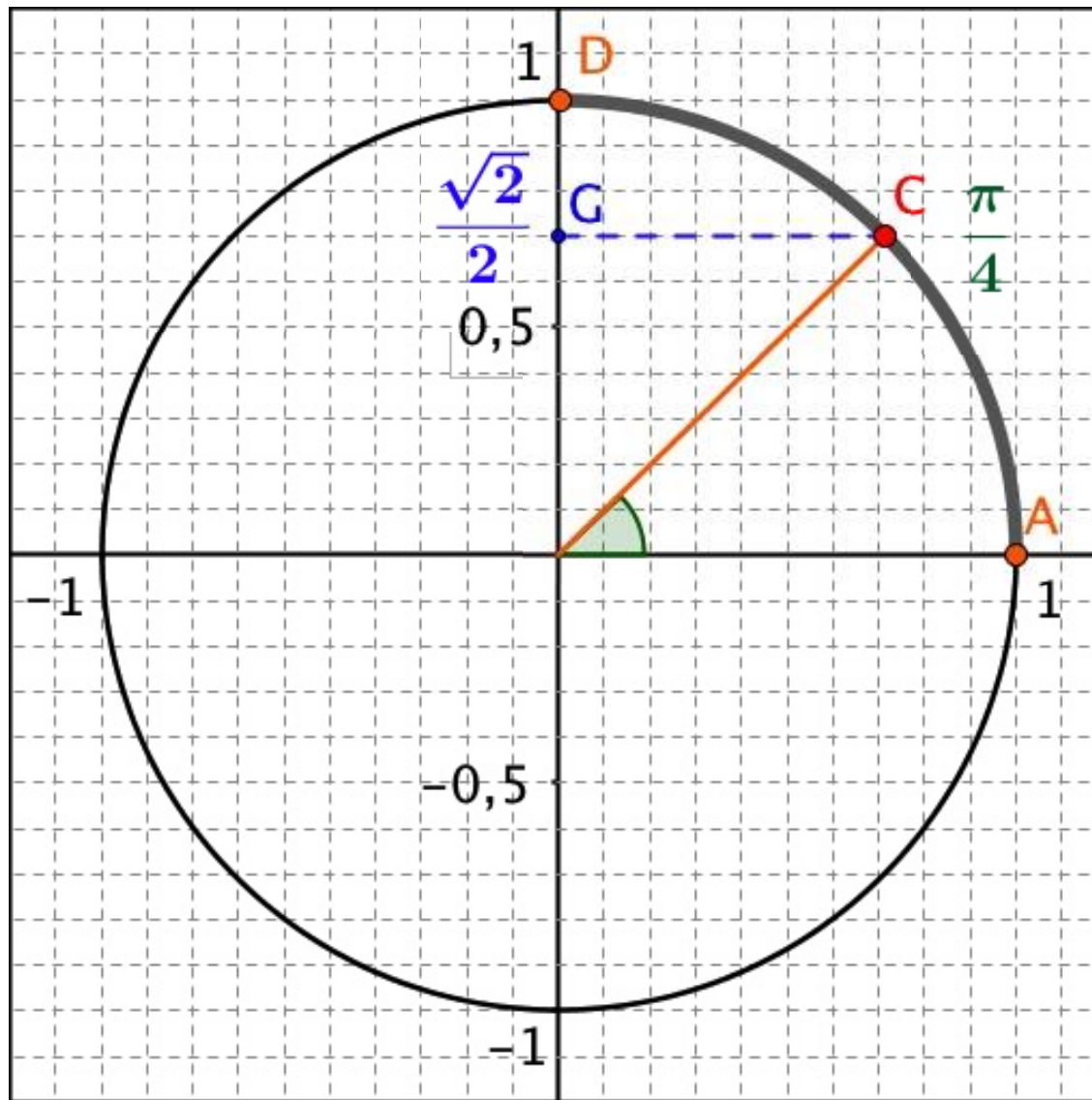


$$x \in \left[0; \frac{\pi}{2}\right]$$

$$\cos x = \frac{1}{2}$$

$$x = \frac{\pi}{3}$$

Nº2

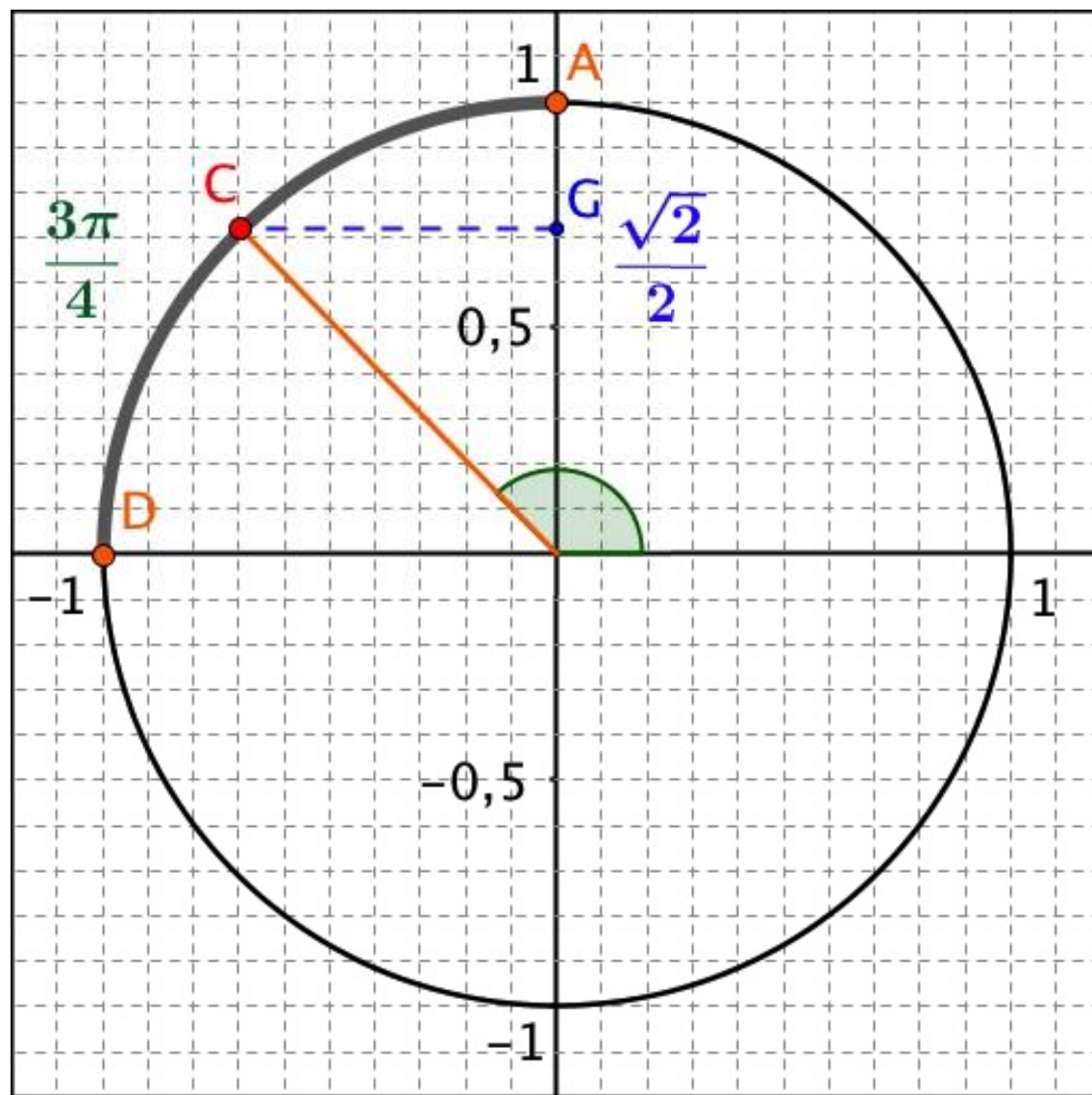


$$x \in \left[0; \frac{\pi}{2}\right]$$

$$\sin x = \frac{\sqrt{2}}{2}$$

$$x = \frac{\pi}{4}$$

Nº3

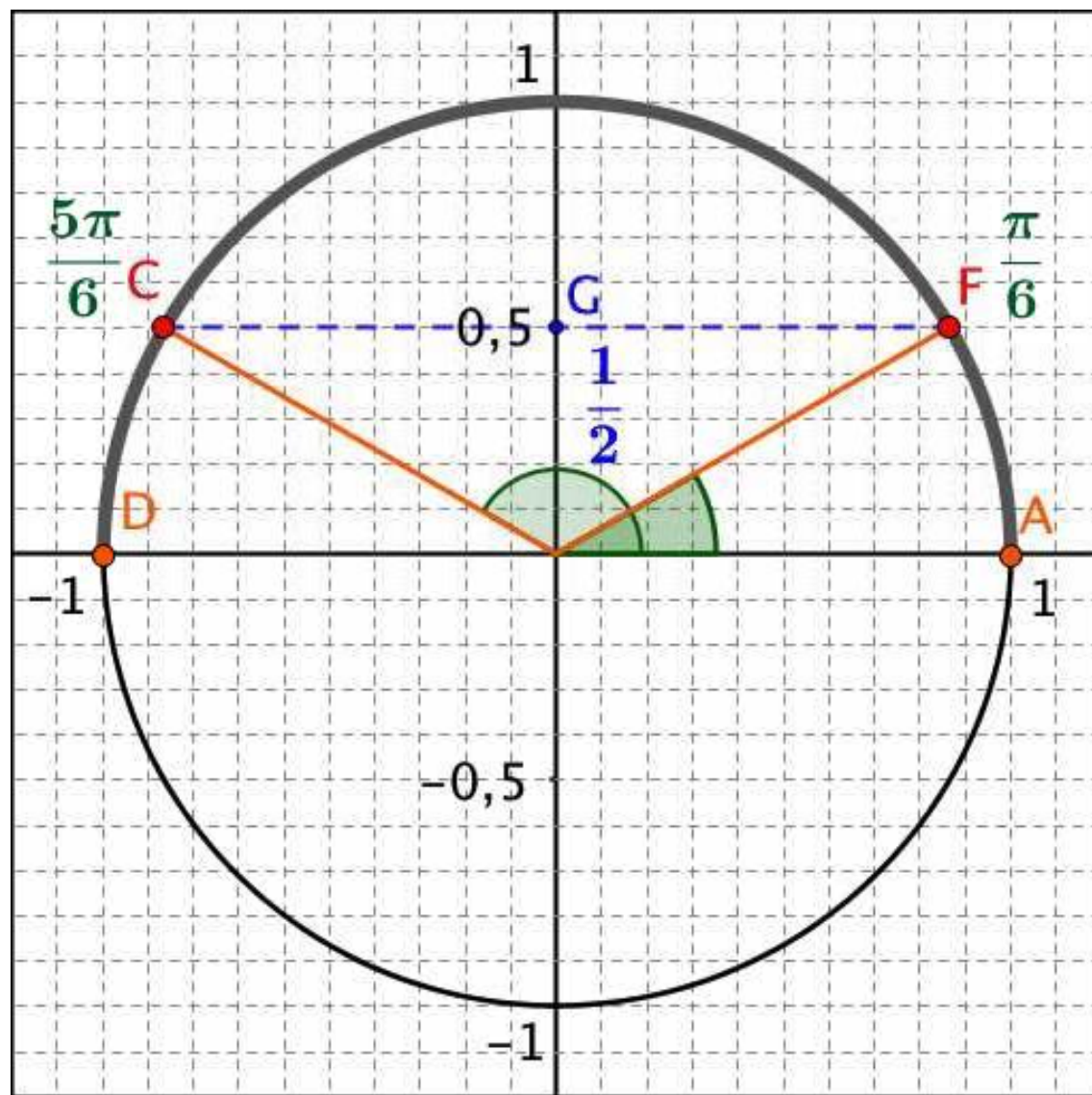


$$x \in \left[\frac{\pi}{2} ; \pi \right]$$

$$\sin x = \frac{\sqrt{2}}{2}$$

$$x = \frac{3\pi}{4}$$

N°4



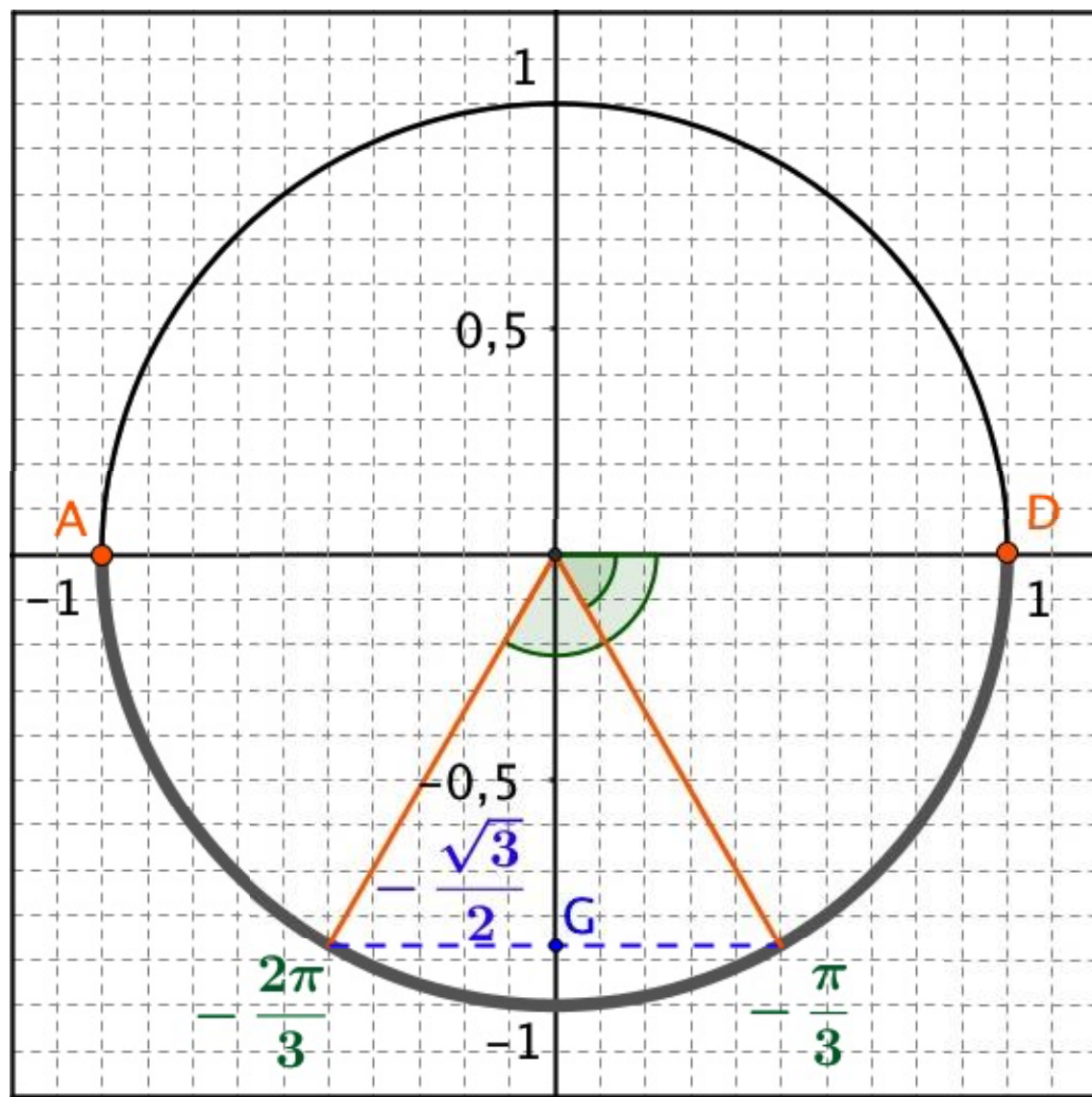
$$x \in [0 ; \pi]$$

$$\sin x = \frac{1}{2}$$

$$x = \frac{\pi}{6}$$

$$\text{ou } x = \frac{5\pi}{6}$$

Nº5



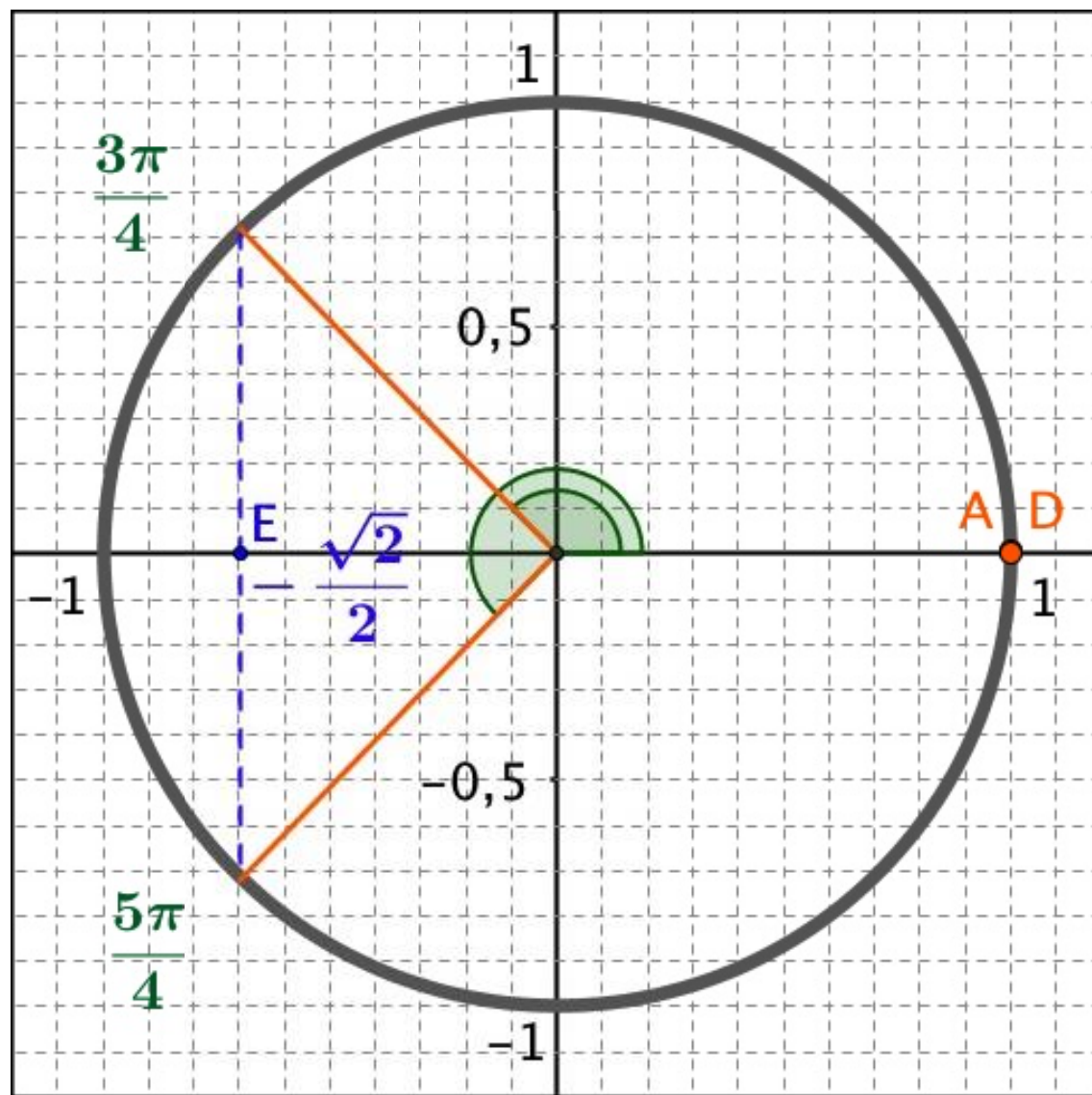
$$x \in [-\pi; 0]$$

$$\sin x = \frac{-\sqrt{3}}{2}$$

$$x = -\frac{\pi}{3}$$

$$\text{ou } x = -\frac{2\pi}{3}$$

N°6



$$x \in [0 ; 2\pi]$$

$$\cos x = -\frac{\sqrt{2}}{2}$$

$$x = \frac{3\pi}{4}$$

$$\text{ou } x = \frac{5\pi}{4}$$

FIN