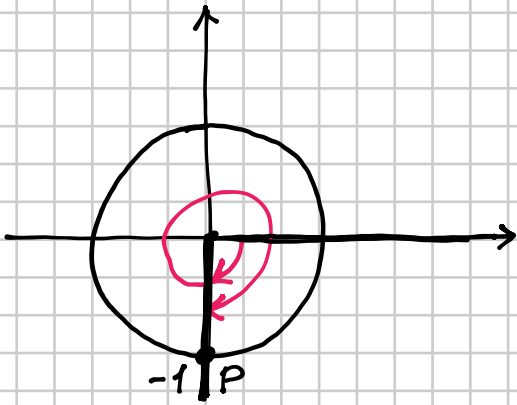


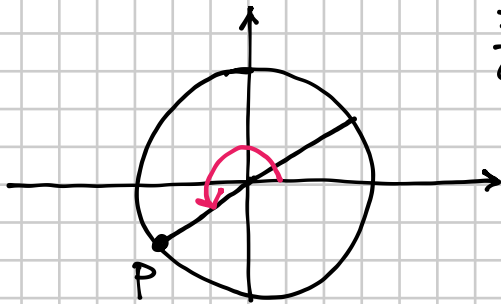
101 **AL VOLO** Indica se i seguenti valori sono positivi, negativi o nulli.

$$\sin\left(-\frac{5}{2}\pi\right); \quad \cos\frac{7}{6}\pi; \quad \sin 380^\circ; \quad \cos 452^\circ; \quad \sin 7\pi; \quad \cos(-170^\circ).$$



$$-\frac{5}{2}\pi = -\left(\frac{\pi}{2} + 2\pi\right) = -\frac{\pi}{2} - 2\pi$$

$$\sin\left(-\frac{5}{2}\pi\right) = -1 < 0$$



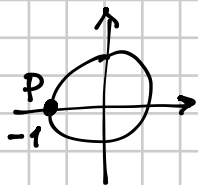
$$\frac{7}{6}\pi = \frac{\pi}{6} + \pi$$

$$\cos\left(\frac{7}{6}\pi\right) < 0$$

$$380^\circ = 360^\circ + 20^\circ \Rightarrow P \text{ \u00e9 nel } 1^\circ \text{ quadrante} \Rightarrow \sin 380^\circ > 0$$

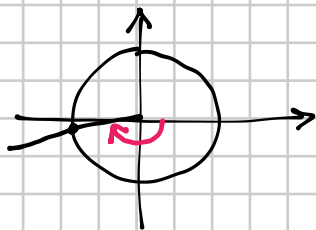
$$452^\circ = 360^\circ + 92^\circ \Rightarrow P \text{ \u00e9 nel } 2^\circ \text{ quadrante} \Rightarrow \cos 452^\circ < 0$$

$$7\pi = 3 \cdot 2\pi + \pi$$



$$\Rightarrow \sin 7\pi = 0$$

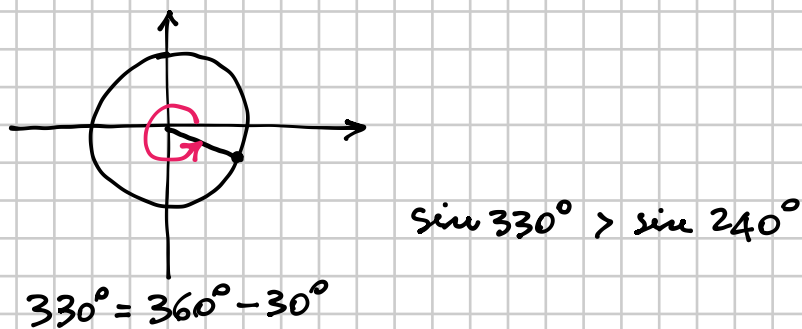
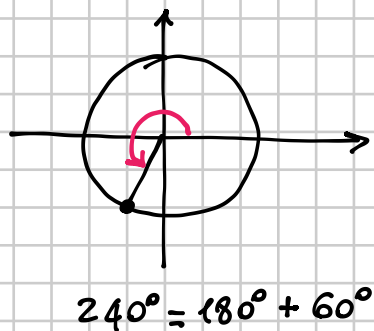
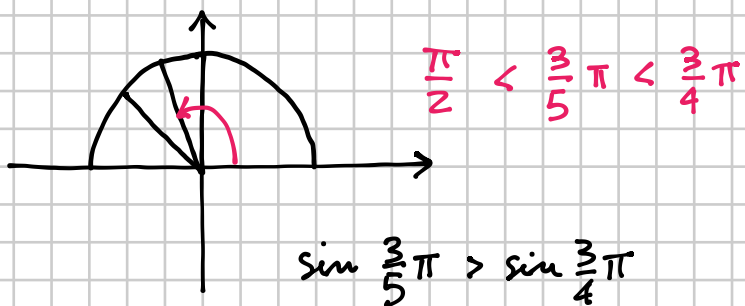
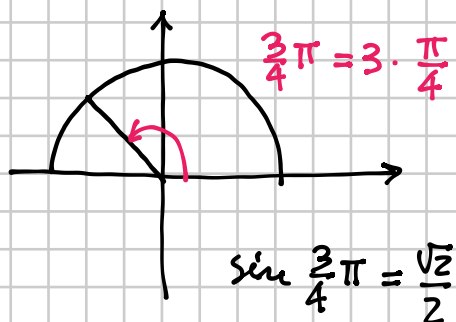
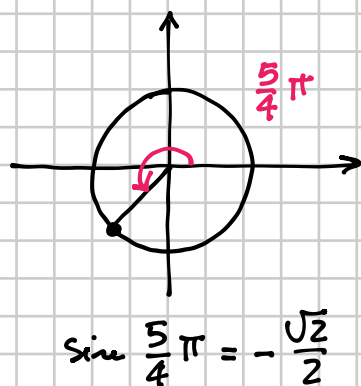
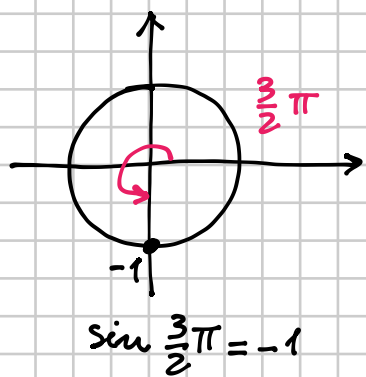
$$-170^\circ$$



$$\cos(-170^\circ) < 0$$

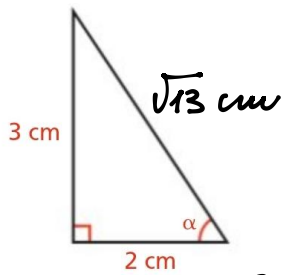
$$\sin \frac{3}{2}\pi < \sin \frac{5}{4}\pi; \quad \sin \frac{3}{4}\pi < \sin \frac{3}{5}\pi; \quad \sin 240^\circ < \sin 330^\circ; \quad \underbrace{\cos 3\pi}_{-1} = \underbrace{\sin\left(-\frac{5}{2}\pi\right)}_{-1}; \quad \sin \frac{\pi}{8} < \underbrace{\cos 4\pi}_{1}.$$

nel 1° quadrante

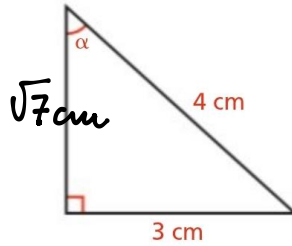


Utilizza i dati nelle figure per determinare i valori richiesti. (uso il TH. DI PITAGORA)

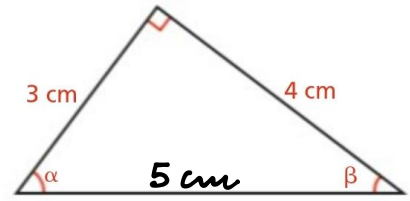
103



a $\sin \alpha = \frac{3}{\sqrt{13}}$ $\cos \alpha = \frac{2}{\sqrt{13}}$



b $\sin \alpha = \frac{3}{4}$ $\cos \alpha = \frac{\sqrt{7}}{4}$



c $\sin \alpha = \frac{4}{5}$ $\cos \beta = \frac{4}{5}$

126

$$a \sin\left(-\frac{5}{2}\pi\right) + \frac{a}{2} \cos(8\pi) - \left(\frac{a}{2} + 1\right) \cos 0 =$$

$$= a \cdot (-1) + \frac{a}{2} \cdot 1 - \left(\frac{a}{2} + 1\right) \cdot 1 =$$

$$= -a + \frac{a}{2} - \frac{a}{2} - 1 = \boxed{-a - 1}$$

Calcolare il valore delle funzioni indicate.

144

$\sin \alpha = \frac{7}{25}$ e $0 < \alpha < \frac{\pi}{2}$; $\cos \alpha = ?$

$\left[\frac{24}{25}\right]$

$$\cos \alpha = \pm \sqrt{1 - \sin^2 \alpha} = + \sqrt{1 - \frac{7^2}{25^2}} = \sqrt{\frac{625 - 49}{625}} = \sqrt{\frac{576}{625}} = \frac{24}{25}$$

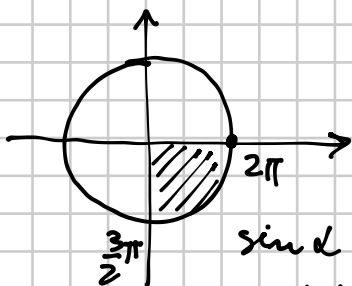
segno + perché

α è nel 1° quadrante

147

$\sin \alpha = -\frac{2}{5}$ e $\frac{3}{2}\pi < \alpha < 2\pi$; $\cos \alpha = ?$

$\left[\frac{\sqrt{21}}{5}\right]$



$\sin \alpha < 0$
 $\cos \alpha > 0$

$$\cos \alpha = + \sqrt{1 - \sin^2 \alpha} = \sqrt{1 - \left(-\frac{2}{5}\right)^2} =$$

$$= \sqrt{1 - \frac{4}{25}} = \sqrt{\frac{21}{25}} = \frac{\sqrt{21}}{5}$$