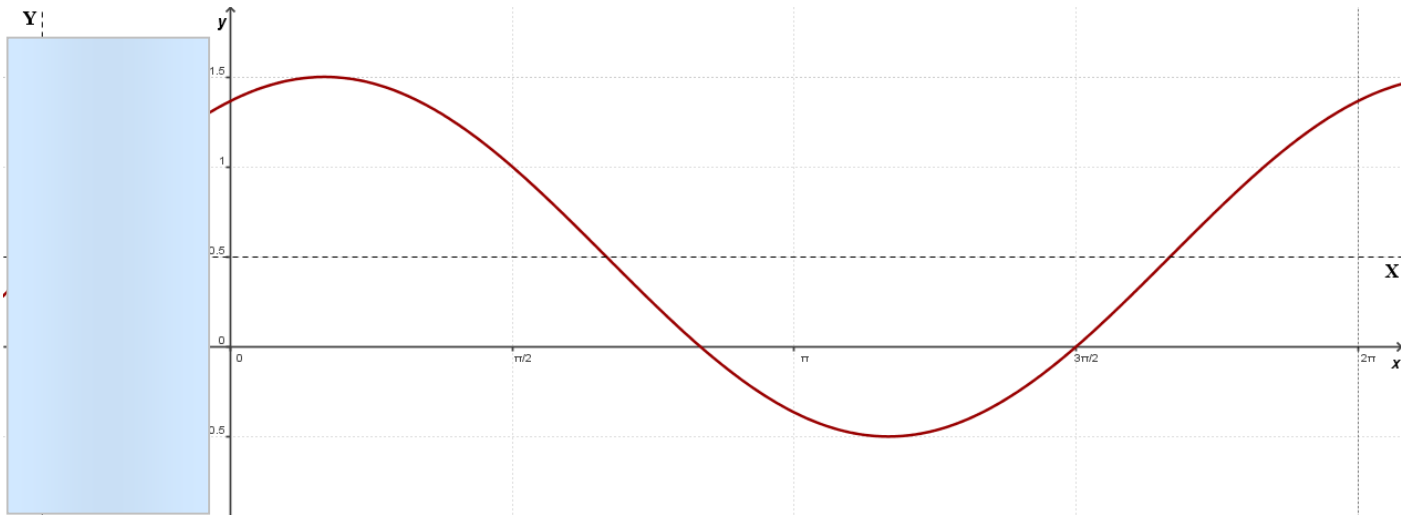
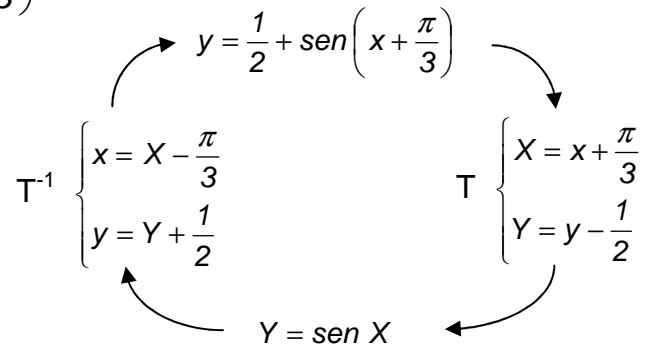


Esercizi sui grafici di funzioni goniometriche

Tracciare il grafico della funzione $y = \frac{1}{2} + \text{sen}\left(x + \frac{\pi}{3}\right)$

$$y - \frac{1}{2} = \text{sen}\left(x + \frac{\pi}{3}\right)$$

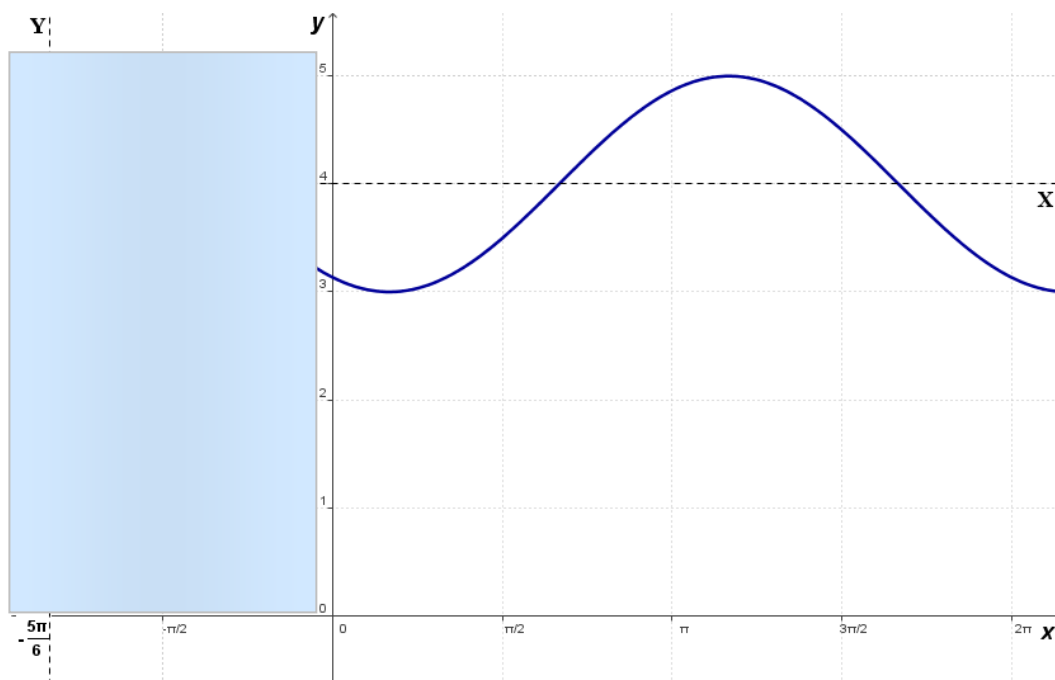
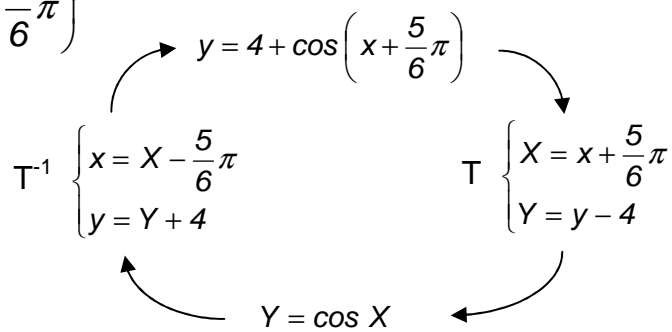
Ponendo $T: \begin{cases} X = x + \frac{\pi}{3} \\ Y = y - \frac{1}{2} \end{cases}$ si ottiene: $Y = \text{sen } X$



Tracciare il grafico della funzione $y = 4 + \cos\left(x + \frac{5}{6}\pi\right)$

$$y - 4 = \cos\left(x + \frac{5}{6}\pi\right)$$

Ponendo $T: \begin{cases} X = x + \frac{5}{6}\pi \\ Y = y - 4 \end{cases}$ si ottiene: $Y = \cos X$

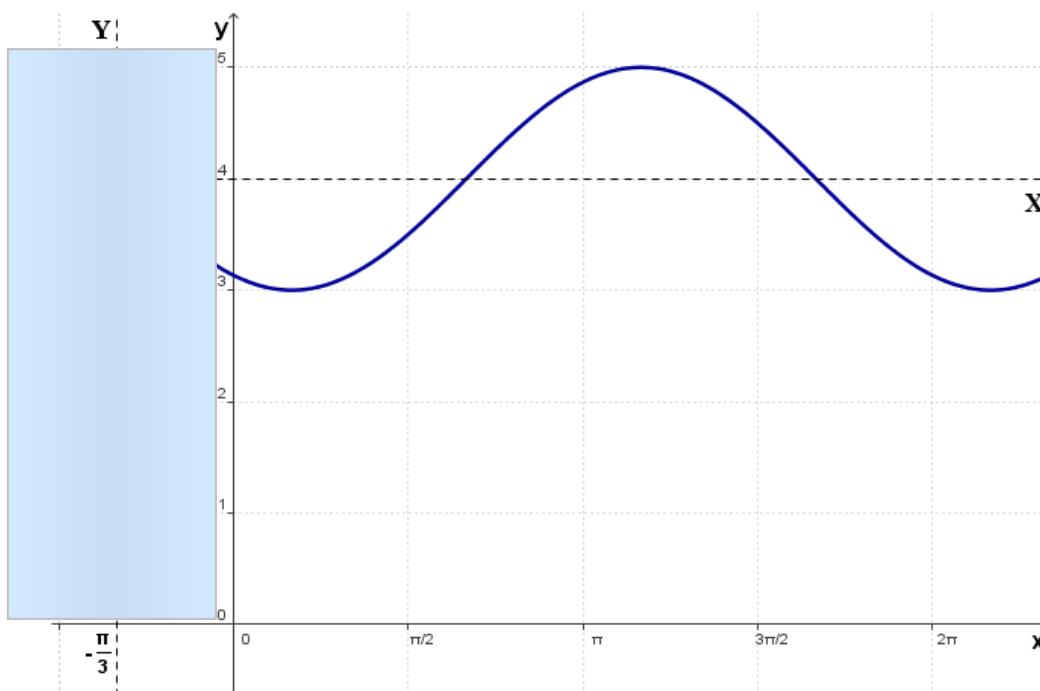
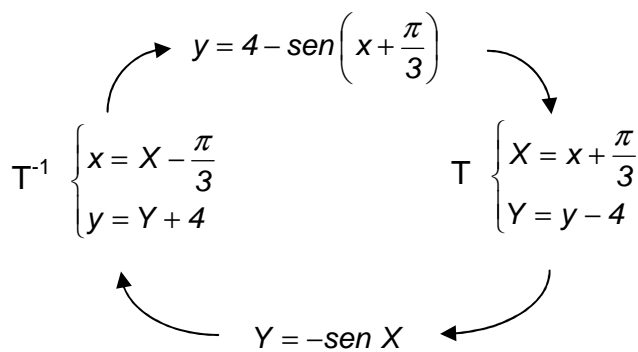


Tracciare il grafico della funzione $y = 4 + \cos\left(x + \frac{5}{6}\pi\right)$

$$y = 4 + \cos\left(x + \frac{5}{6}\pi\right); \quad y = 4 + \sin\left[\frac{\pi}{2} - \left(x + \frac{5}{6}\pi\right)\right]; \quad y = 4 + \sin\left(-x - \frac{\pi}{3}\right); \quad y = 4 + \sin - \left(x + \frac{\pi}{3}\right);$$

$$y = 4 - \sin\left(x + \frac{\pi}{3}\right); \quad y - 4 = -\sin\left(x + \frac{\pi}{3}\right)$$

Ponendo $T: \begin{cases} X = x + \frac{\pi}{3} \\ Y = y - 4 \end{cases}$ si ottiene: $Y = -\sin X$



Tracciare il grafico della funzione: $y = 2 + \text{sen } x - \sqrt{3} \cos x$

$$y = \text{sen } x - \sqrt{3} \cos x + 2; \quad A = \sqrt{a^2 + b^2} = \sqrt{1^2 + (-\sqrt{3})^2} = 2; \quad \tan \gamma = \frac{b}{a}; \quad \tan \gamma = -\sqrt{3}; \quad \gamma = -\frac{\pi}{3}$$

$$y = 2 \text{sen} \left(x - \frac{\pi}{3} \right) + 2 = 0; \quad y - 2 = 2 \text{sen} \left(x - \frac{\pi}{3} \right);$$

Ponendo $T : \begin{cases} X = x - \frac{\pi}{3} \\ Y = y - 2 \end{cases}$ si ottiene: $Y = 2 \text{sen } X$.

$$T^{-1} \begin{cases} x = X + \frac{\pi}{3} \\ y = Y + 2 \end{cases} \quad Y = 2 \text{sen } X \quad T \begin{cases} X = x - \frac{\pi}{3} \\ Y = y - 2 \end{cases}$$

