

Gráficos

1.1 Funções trigonométricas

As imagens desta seção são animadas (GIF). Infelizmente não são todos os Softwares para visualização de arquivos **.pdf** que são compatíveis com este tipo de imagem. Um software que é compatível chama-se **Adobe Reader**.

1.1.1 Função Cosseno

$$f(x) = \cos(x), \text{ Dom } f = \mathbb{R} \text{ e } \text{Im } f = [-1, 1].$$

1.1.2 Função Seno

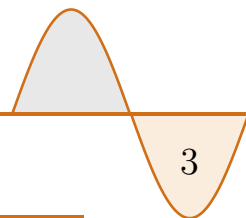
$$f(x) = \text{sen}(x), \text{ Dom } f = \mathbb{R} \text{ e } \text{Im } f = [-1, 1].$$

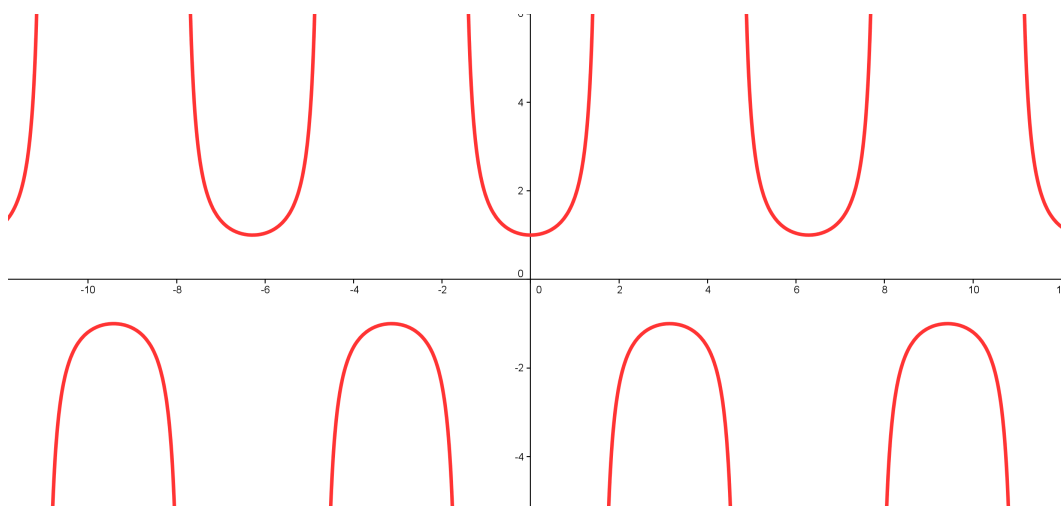
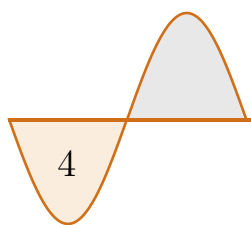
1.1.3 Função Tangente

$$f(x) = \tan(x) = \frac{\text{sen}(x)}{\cos(x)}, \text{ Dom } f = \mathbb{R} \setminus \left\{ (2k+1)\frac{\pi}{2}; k \in \mathbb{Z} \right\} \text{ e } \text{Im } f = \mathbb{R}.$$

1.1.4 Função Secante

$$f(x) = \sec(x) = \frac{1}{\cos(x)}, \text{ Dom } f = \mathbb{R} \setminus \left\{ (2k+1)\frac{\pi}{2}; k \in \mathbb{Z} \right\} \text{ e } \text{Im } f = (-\infty, -1] \cup [1, \infty).$$



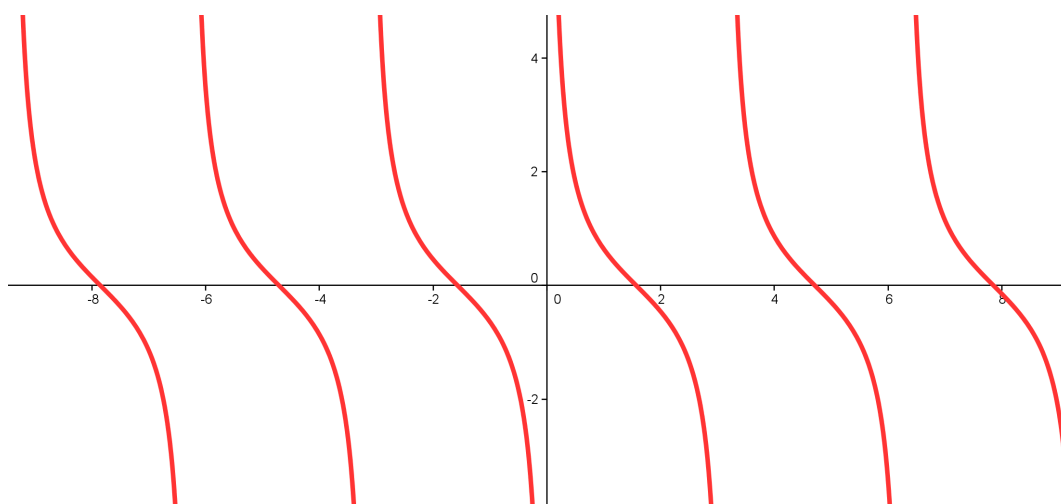


1.1.5 Função Cossecante

$$f(x) = \csc(x) = \frac{1}{\sin(x)}, \quad \text{Dom } f = \mathbb{R} \setminus \{k\pi, k \in \mathbb{Z}\} \text{ e } \text{im } f = (-\infty, -1] \cup [1, \infty).$$

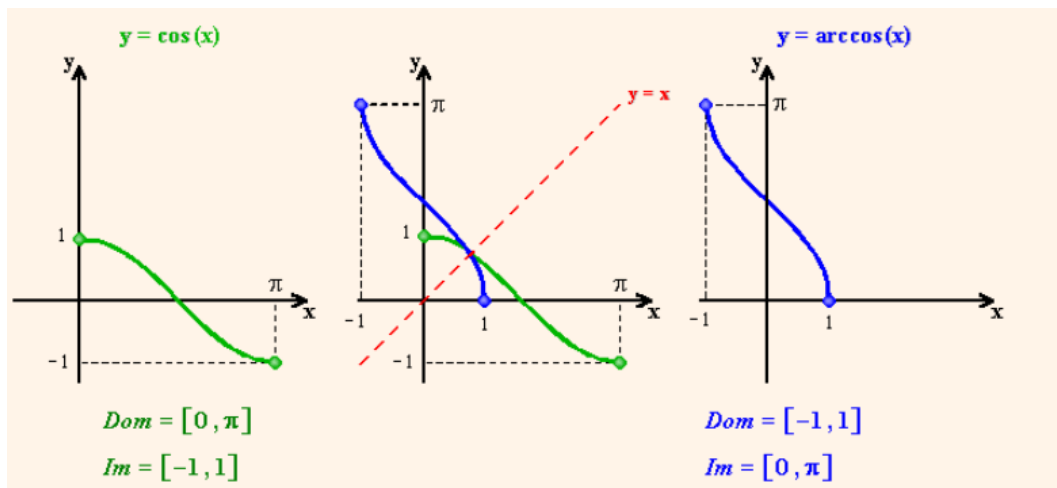
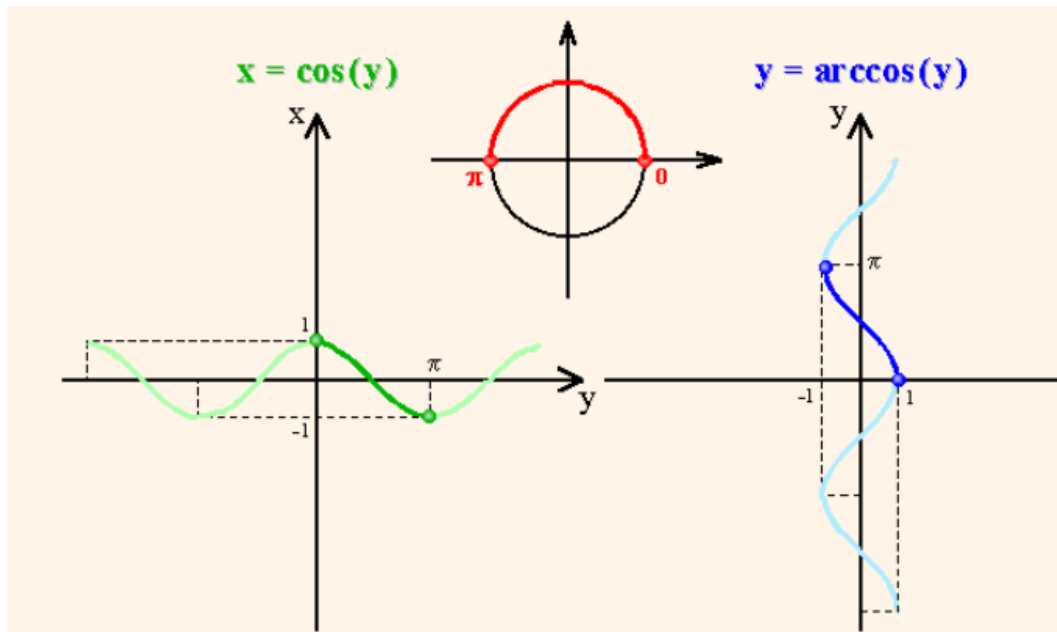
1.1.6 Função Cotangente

$$f(x) = \cot(x) = \frac{\cos(x)}{\sin(x)}, \quad \text{Dom } f = \mathbb{R} \setminus \{k\pi; k \in \mathbb{Z}\} \text{ e } \text{Im } f = \mathbb{R}.$$

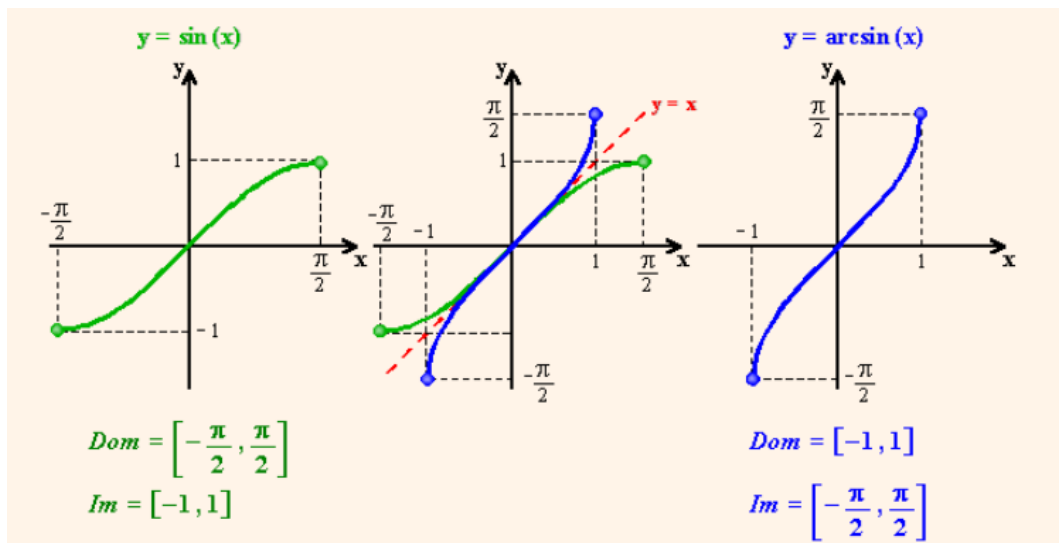
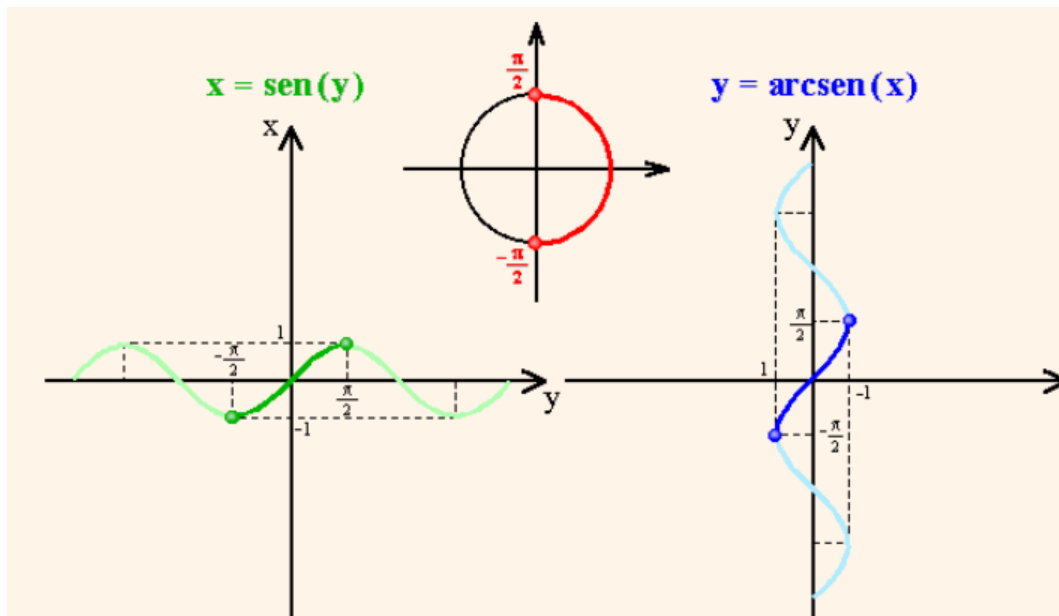


1.2 Funções Trigonométricas Inversas

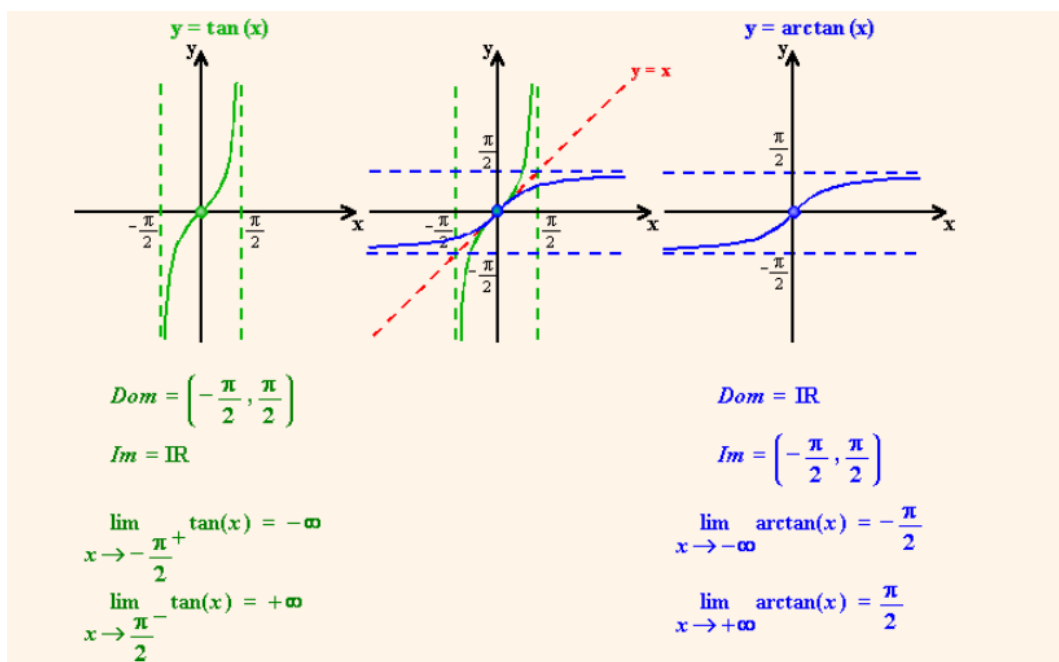
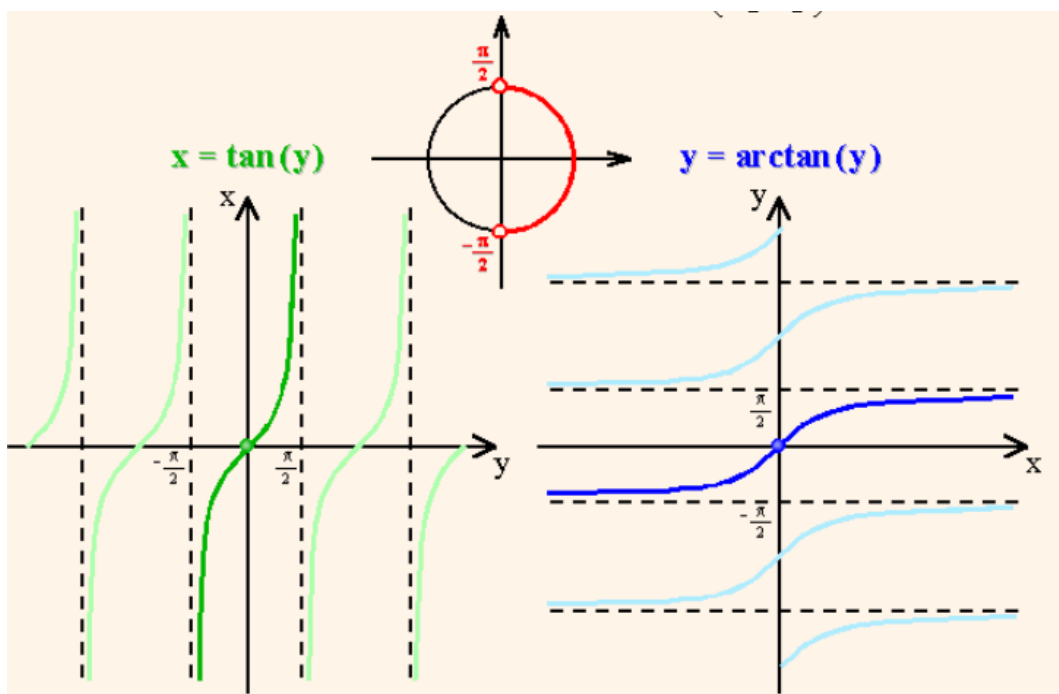
1.2.1 Função Arco Cosseno



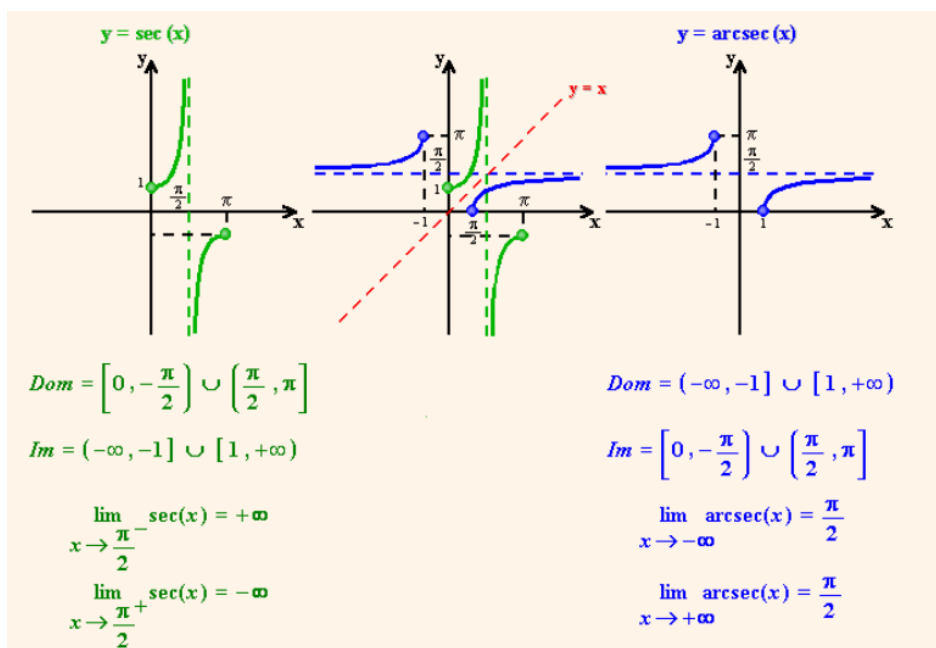
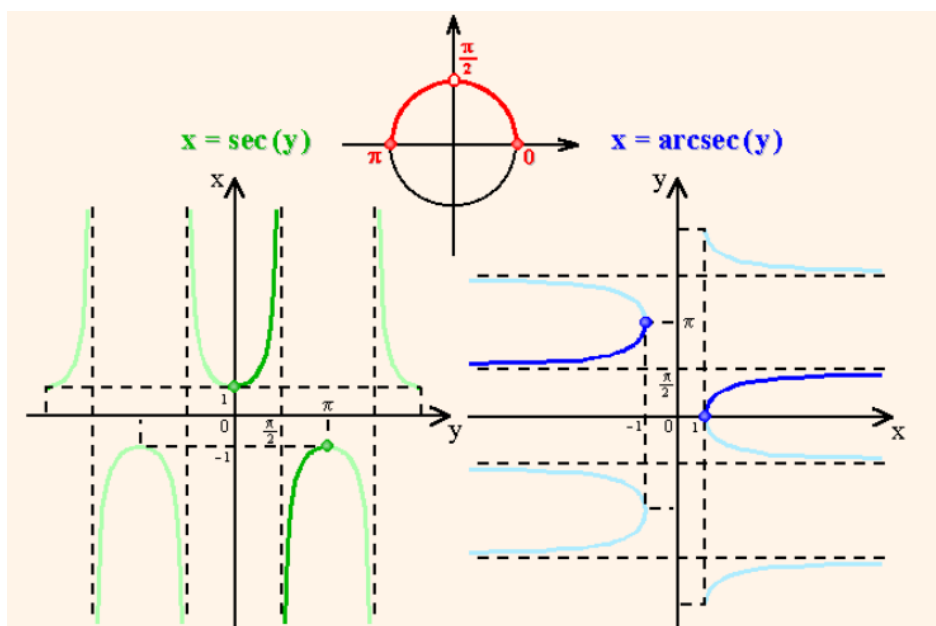
1.2.2 Função Arco Seno



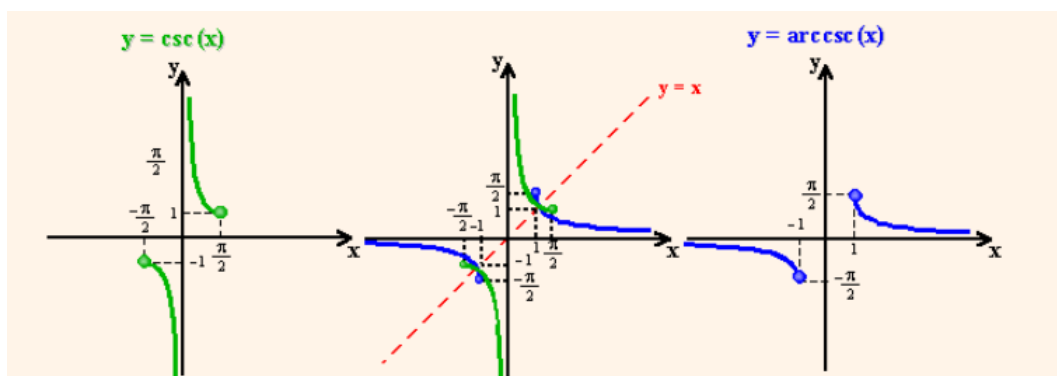
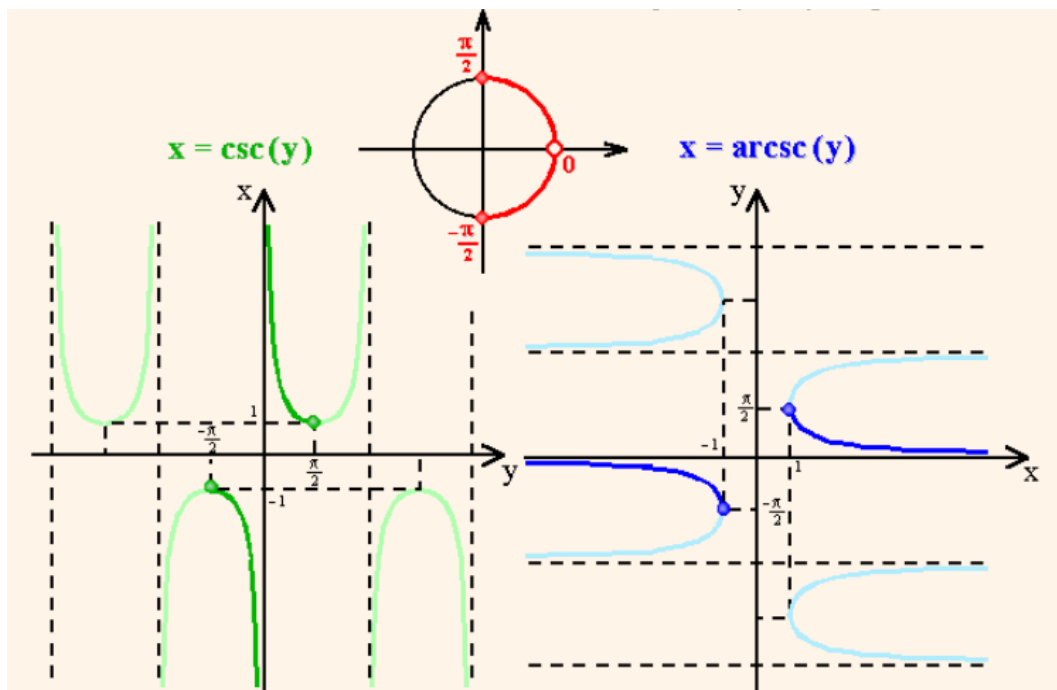
1.2.3 Função Arco Tangente



1.2.4 Função Arco Secante



1.2.5 Função Arco Cossecante



$$\text{Dom} = \left[-\frac{\pi}{2}, 0\right) \cup \left(0, \frac{\pi}{2}\right]$$

$$\text{Im} = (-\infty, -1] \cup [1, +\infty)$$

$$\lim_{x \rightarrow 0^-} \csc(x) = -\infty$$

$$\lim_{x \rightarrow 0^+} \csc(x) = +\infty$$

$$\text{Dom} = (-\infty, -1] \cup [1, +\infty)$$

$$\text{Im} = \left[-\frac{\pi}{2}, 0\right) \cup \left(0, \frac{\pi}{2}\right]$$

$$\lim_{x \rightarrow -\infty} \operatorname{arcsc}(x) = 0$$

$$\lim_{x \rightarrow +\infty} \operatorname{arcsc}(x) = 0$$

$$\lim_{x \rightarrow -\infty} \operatorname{arcsc}(x) = 0$$

1.2.6 Função Arco Cotangente

