

Tarea de Límites Trigonométricos

① $\lim_{x \rightarrow \pi} \frac{1 - \operatorname{sen} \frac{x}{2}}{\pi - x}$ **Rpta. 0**

② $\lim_{x \rightarrow 0} \frac{\cos x - \cos 3x}{x^2}$ **Rpta. 4**

③ $\lim_{x \rightarrow 0} \frac{\operatorname{tg} x - \operatorname{sen} x}{x^3}$ **Rpta. $\frac{1}{2}$**

④ $\lim_{x \rightarrow 0} \frac{x - \operatorname{sen} 2x}{x + \operatorname{sen} 3x}$ **Rpta. $-\frac{1}{4}$**

⑤ $\lim_{x \rightarrow 0} \frac{1 - \sqrt{\cos x}}{x^2}$ **Rpta. $\frac{1}{4}$**

⑥ $\lim_{h \rightarrow 0} \frac{\operatorname{sen}(x+h) - \operatorname{sen} x}{h}$ **Rpta. $\cos x$**

⑦ $\lim_{x \rightarrow 0} \frac{\sqrt{1 + \operatorname{sen} x} - \sqrt{1 - \operatorname{sen} x}}{x}$ **Rpta. 1**

①⑨ $\lim_{x \rightarrow a} \frac{\operatorname{sen} x - \operatorname{sen} a}{x - a}$ **Rpta. $\cos a$**

②⑩ $\lim_{x \rightarrow a} \frac{\cos x - \cos a}{x - a}$ **Rpta. $-\operatorname{sen} a$**

(45)

$$\lim_{x \rightarrow \frac{\pi}{2}} \frac{\cos x}{\sqrt{1 - \sin x}}$$

Rpta. $\sqrt{2}$

(46)

$$\lim_{x \rightarrow 0} \frac{\cos x - \sqrt{\cos 2x}}{x \sin x}$$

Rpta. $\frac{1}{2}$

(56)

$$\lim_{x \rightarrow a} \frac{\sin^2 x - \sin^2 a}{x - a}$$

Rpta. $\sin 2a$

(65)

$$\lim_{x \rightarrow 0} \frac{\operatorname{tg}\left(x + \frac{\pi}{4}\right) - 1}{\sin x}$$

(66)

$$\lim_{x \rightarrow 0} \frac{\sqrt[3]{1+x} - \operatorname{tg} x - 1 + \cos ex}{x}$$

(67)

$$\lim_{x \rightarrow 0} \frac{1 - \cos x}{\sin^2 x}$$

(68)

$$\lim_{x \rightarrow 0} \frac{(2 - 2 \cos x)^2}{x^4}$$