



ភ្នំពេញ ថ្ងៃទី ២៨ តុលា ២០១៧

របៀបដោះស្រាយលីមីតអនុគមន៍ត្រីកោណមាត្រ

➢ ត្រូវបំប្លែងឲ្យចូររាង៖

$$១. \frac{\sin u}{u} = 1 \text{ ពេល } u \rightarrow 0$$

$$២. \frac{\sin^n u}{u^n} = 1 \text{ ពេល } u \rightarrow 0$$

➢ រូបមន្តបំប្លែងជា $\sin \alpha$

$$១. 1 - \cos \alpha = 2 \sin^2 \frac{\alpha}{2}$$

$$២. 1 - \cos^2 \alpha = \sin^2 \alpha$$

$$៣. \cos p - \cos q = -2 \sin \frac{p-q}{2} \cos \frac{p+q}{2}$$

លំហាត់

$$១. \lim_{x \rightarrow 0} \frac{2 \sin x}{3x} \quad \text{ចំ. } \frac{2}{3}$$

$$២. \lim_{x \rightarrow 0} \frac{2 \sin 3x}{-5x} \quad \text{ចំ. } -\frac{6}{5}$$

$$៣. \lim_{x \rightarrow 0} \frac{\tan 3x}{2x} \quad \text{ចំ. } \frac{3}{2}$$

$$៤. \lim_{x \rightarrow 0} \frac{7x}{\sin 3x} \quad \text{ចំ. } \frac{7}{3}$$

$$៥. \lim_{x \rightarrow 0} \frac{7 \tan x}{8x} \quad \text{ចំ. } \frac{7}{8}$$

$$៦. \lim_{x \rightarrow 0} \frac{\sin 4x}{\sin 3x} \quad \text{ចំ. } \frac{4}{3}$$

$$៧. \lim_{x \rightarrow 0} \frac{\sin 2018x}{\sin 2019x} \quad \text{ចំ. } \frac{2018}{2019}$$

$$៨. \lim_{x \rightarrow 0} \frac{\tan ax}{\sin bx} \quad \text{ចំ. } \frac{a}{b}$$

$$៩. \lim_{x \rightarrow 0} \frac{\sin nx}{\sin mx} \quad \text{ចំ. } \frac{n}{m}$$

$$១០. \lim_{x \rightarrow 0} \frac{\sin 4x + \sin 3x}{3x} \quad \text{ចំ. } \frac{7}{3}$$

$$១១. \lim_{x \rightarrow 0} \frac{\tan 5x - \sin 2x}{x} \quad \text{ចំ. } 3$$

$$១២. \lim_{x \rightarrow 0} \frac{x + \sin x}{2x - 3 \sin x} \quad \text{ចំ. } -2$$

$$១៣. \lim_{x \rightarrow 0} \frac{\sin x - 2x}{x - 2 \sin 2x} \quad \text{ចំ. } \frac{1}{3}$$

$$១៤. \lim_{x \rightarrow 0} \frac{2 \sin x}{2x - 3 \sin 5x} \quad \text{ចំ. } -\frac{2}{13}$$

$$១៥. \lim_{x \rightarrow 0} \frac{x \sin x}{\sin^2 5x} \quad \text{ចំ. } \frac{1}{25}$$

$$១៦. \lim_{x \rightarrow 0} \frac{x^2}{\sin^2 3x} \quad \text{ចំ. } \frac{1}{9}$$

$$១៧. \lim_{x \rightarrow 0} \frac{x \sin 3x}{\sin^2 5x} \quad \text{ចំ. } \frac{3}{25}$$

$$១៨. \lim_{x \rightarrow 0} \frac{\sin x + \sin 2x + \sin 3x}{\sin 4x + \sin 5x + \sin 6x} \quad \text{ចំ. } \frac{2}{5}$$

$$១៩. \lim_{x \rightarrow 0} \frac{\sin(\sin 2x)}{\sin 5x} \quad \text{ចំ. } \frac{2}{5}$$

$$២០. \lim_{x \rightarrow 0} \frac{\sin^2 10x}{\sin^2 15x} \quad \text{ចំ. } \frac{4}{9}$$

$$២១. \lim_{x \rightarrow 0} \frac{\sin^2 7x}{\sin^2 3x} \quad \text{ចំ. } \frac{49}{9}$$

$$២២. \lim_{x \rightarrow 0} \frac{\tan^2 4x}{\sin^2 3x} \quad \text{ចំ. } \frac{16}{9}$$

$$២៣. \lim_{x \rightarrow 0} \frac{\sin x \sin 2x \sin 3x \cdots \sin nx}{x^n} \quad \text{ចំ. } n!$$

$$២៤. \lim_{x \rightarrow 0} \frac{\sin x \sin 2x \sin 3x \cdots \sin 20x}{x^{20}} \quad \text{ចំ. } 20!$$

$$២៥. \lim_{x \rightarrow 0} \frac{\sin x + \sin 2x + \sin 3x + \cdots + \sin nx}{x} \quad \text{ចំ. } \frac{n(n+1)}{2}$$

$$២៦. \lim_{x \rightarrow 0} \frac{\tan x + 2 \tan 2x + 3 \tan 3x + \cdots + n \tan nx}{x} \quad \text{ចំ. } \frac{n(n+1)(2n+1)}{6}$$

$$២៧. \lim_{x \rightarrow 0} \frac{\sin^3 x + \sin^3 2x + \sin^3 3x + \cdots + \sin^3 nx}{x^3} \quad \text{ចំ. } \frac{n^2(n+1)^2}{4}$$

$$២៨. \lim_{x \rightarrow 0} \frac{1 - \cos x}{x} \quad \text{ចំ. } 0$$

$$២៩. \lim_{x \rightarrow 0} \frac{1 - \cos 3x}{x^2} \quad \text{ចំ. } \dots$$

$$៣០. \lim_{x \rightarrow 0} \frac{1 - \cos^2 x}{3x \sin x} \quad \text{ចំ. } \dots$$

$$៣១. \lim_{x \rightarrow 0} \frac{x \sin x}{2 - 2 \cos^2 2x} \quad \text{ចំ. } \frac{1}{8}$$

$$៣២. \lim_{x \rightarrow 0} \frac{x^2 - \sin^2 x}{x^2 - x \sin x} \quad \text{ចំ. } 2$$

$$៣៣. \lim_{x \rightarrow 0} \frac{4x^2 - \sin^2 2x}{2x^2 - x \sin 2x} \quad \text{ចំ. } 4$$

$$៣៤. \lim_{x \rightarrow 0} \frac{\cos^2 2x - 1}{x^2} \quad \text{ចំ. } -4$$



ក្នុងពេលថ្ងៃទី ០៧ វិច្ឆិកា ២០១៧

$$\text{៣៥. } \lim_{x \rightarrow \frac{\pi}{3}} \frac{\sqrt{2\cos x} - 1}{2\cos 2x + 1} \quad \text{ប៉. } \frac{1}{4}$$

$$\text{៣៦. } \lim_{x \rightarrow 0} \frac{\cos x - 1}{x} \quad \text{ប៉. } 0$$

$$\text{៣៧. } \lim_{x \rightarrow 0} \frac{1 - \cos^2 x}{x^2} \quad \text{ប៉. } 1$$

$$\text{៣៨. } \lim_{x \rightarrow 0} \frac{1 - \cos 2x}{x \sin 3x} \quad \text{ប៉. } \frac{2}{3}$$

$$\text{៣៩. } \lim_{x \rightarrow 0} \frac{1 - \sqrt{\cos 3x}}{1 - \cos 5x} \quad \text{ប៉. } \frac{9}{50}$$

$$\text{៤០. } \lim_{x \rightarrow 0} \frac{1 - \cos(1 - \cos x)}{x^4} \quad \text{ប៉. } \frac{1}{8}$$

$$\text{៤១. } \lim_{x \rightarrow 0} \frac{\cos x - \cos^2 x}{x} \quad \text{ប៉. } 0$$

$$\text{៤២. } \lim_{x \rightarrow 0} \frac{\cos 3x - \cos^2 3x}{6x} \quad \text{ប៉. } 0$$

$$\text{៤៣. } \lim_{x \rightarrow 0} \frac{1 - \cos 4x}{x^2} \quad \text{ប៉. } 8$$

$$\text{៤៤. } \lim_{x \rightarrow 0} \frac{1 - \cos^2 x}{3x^2} \quad \text{ប៉. } \frac{1}{3}$$

$$\text{៤៥. } \lim_{x \rightarrow 0} \frac{1 - \cos 5x}{x^2} \quad \text{ប៉. } \frac{25}{2}$$

$$\text{៤៦. } \lim_{x \rightarrow 0} \frac{\sin(3x + 1989\pi)}{\sin(4x + 1987\pi)} \quad \text{ប៉. } \frac{3}{4}$$

$$\text{៤៧. } \lim_{x \rightarrow 0} \frac{\sin(2017\pi - 2x)}{\sin(2018\pi + 4x)} \quad \text{ប៉. } 1$$

រៀនគូរ

$$\text{៤៨. } \lim_{x \rightarrow 0} \frac{\sin(432\pi - x)}{\sin(504\pi - 7x)} \quad \text{ប៉. } 1$$

$$\text{៤៩. } \lim_{x \rightarrow 0} \frac{\sin x + 1 - \cos x}{x} \quad \text{ប៉. } -8$$

$$\text{៥០. } \lim_{x \rightarrow 0} \frac{x \sin x - 2 \sin 4x}{\tan x} \quad \text{ប៉. } \left(\frac{n}{m}\right)^2$$

$$\text{៥១. } \lim_{x \rightarrow 0} \frac{1 - \cos nx}{1 - \cos mx} \quad \text{ប៉. } \frac{9}{25}$$

$$\text{៥២. } \lim_{x \rightarrow 0} \frac{1 - \cos 3x}{1 - \cos 5x} \quad \text{ប៉. } \frac{3}{2}$$

$$\text{៥៣. } \lim_{x \rightarrow 0} \frac{(1 + x^2) - \cos x}{\tan^2 x} \quad \text{ប៉. } 2 \cos a$$

$$\text{៥៤. } \lim_{x \rightarrow 0} \frac{\sin(a + x) - \sin(a - x)}{x} \quad \text{ប៉. } 0$$

$$\text{៥៥. } \lim_{x \rightarrow 0} \frac{\tan x - \sin x}{x} \quad \text{ប៉. } \frac{1}{2}$$

$$\text{៥៦. } \lim_{x \rightarrow 0} \frac{\tan x - \sin x}{x^3} \quad \text{ប៉. } 1$$

$$\text{៥៧. } \lim_{x \rightarrow 0} \frac{x(a - b)}{\sin ax - \sin bx}, (a, b \neq 0, a \neq b) \quad \text{ប៉. } -1$$

$$\text{៥៨. } \lim_{x \rightarrow 0} \frac{1 + \sin x - \cos x}{1 - \sin x - \cos x} \quad \text{ប៉. } 1$$

$$\text{៥៩. } \lim_{x \rightarrow 0} \frac{\sin(\sin(\sin x))}{x} \quad \text{ប៉. } \frac{1}{n}$$

$$\text{៦០. } \lim_{x \rightarrow 0} \frac{1 + \sin x - \cos x}{1 + \sin nx - \cos nx} \quad \text{ប៉. } \frac{1}{2}$$

$$\text{៦១. } \lim_{x \rightarrow 0} \frac{(1 - \cos x) \sin x}{\tan^3 x} \quad \text{ប៉. } \left(\frac{b^2 - a^2}{2}\right)$$

$$\text{៦២. } \lim_{x \rightarrow 0} \frac{\cos ax - \cos bx}{x^2}$$

$$\text{៦៣. } \lim_{x \rightarrow 0} \frac{2 \sin x - \sin 2x}{x^3} \quad \text{ប៉. } \frac{a^2 + b^2}{2}$$

$$\text{៦៤. } \lim_{x \rightarrow 0} \frac{1 - \cos ax \cos bx}{x^2} \quad \text{ប៉. } \frac{b^2 + c^2 - a^2}{2}$$

$$\text{៦៥. } \lim_{x \rightarrow 0} \frac{\cos ax - \cos bx \cos cx}{x^2} \quad \text{ប៉. } \frac{3}{2}$$

$$\text{៦៦. } \lim_{x \rightarrow 0} \frac{1 - \cos x \sqrt{\cos 2x}}{x^2} \quad \text{ប៉. } -\frac{35}{2}$$

$$\text{៦៧. } \lim_{x \rightarrow 0} \frac{\cos 6x - \cos x}{\sin^2 x} \quad \text{ប៉. } \pm\infty$$

$$\text{៦៨. } \lim_{x \rightarrow 0} \frac{(1 - \cos x)^2}{\tan^3 x - \sin^3 x} \quad \text{ប៉. } 2$$

$$\text{៦៩. } \lim_{x \rightarrow 0} \frac{1 - \cos 4x}{2x \tan 2x} \quad \text{ប៉. } \frac{1}{5}$$

$$\text{៧០. } \lim_{x \rightarrow 0} \frac{2 \sin^2 x - 2(1 - \cos x)}{5x^2} \quad \text{ប៉. } 0$$

$$\text{៧១. } \lim_{x \rightarrow 0} \frac{\cos 3x - \cos x}{\sin 5x + \sin 3x} \quad \text{ប៉. } \frac{1}{4}$$

$$\text{៧២. } \lim_{x \rightarrow 0} \frac{(1 - \cos x)}{x^2 (1 + \sqrt{\cos x})} \quad \text{ប៉. } \frac{1}{2}$$

$$\text{៧៣. } \lim_{x \rightarrow 0} \frac{\cos x - \sqrt{\cos 2x}}{\sin^2 x} \quad \text{ប៉. } \pm\infty$$

$$\text{៧៤. } \lim_{x \rightarrow 0} \frac{\sqrt[3]{\tan^3 x}}{\sqrt[3]{(1 - \cos x)^2}} \quad \text{ប៉. } 1$$

$$\text{៧៥. } \lim_{x \rightarrow 0} \frac{\sqrt{1 + \sin^2 x} - \cos x}{\sin^2 x} \quad \text{ប៉. } \frac{1}{2}$$

$$\text{៧៦. } \lim_{x \rightarrow 0} \frac{1 - \cos \sqrt{x}}{\sin x}$$



កំពេញថ្ងៃទី ០៨ វិច្ឆិកា ២០១៧

រៀនគួរ

៧៧. $\lim_{x \rightarrow 0} \frac{\sqrt{2+x} - \sqrt{2-x}}{\sin x}$ ចំ. $\frac{\sqrt{2}}{2}$

៧៨. $\lim_{x \rightarrow 0} \frac{\sin 3x}{-x}$ ចំ. -3

៧៩. $\lim_{x \rightarrow 0} \frac{\sqrt{1+x} - \sqrt{1-x}}{\sin 2x}$ ចំ. $\frac{1}{4}$

៨០. $\lim_{x \rightarrow 0} \frac{\sin 2x}{\sqrt{x+1} - 1}$ ចំ. 4

៨១. $\lim_{x \rightarrow 0} \frac{\sin 2x}{\sqrt{2x+3} - \sqrt{3}}$ ចំ. $2\sqrt{3}$

៨២. $\lim_{x \rightarrow 0} \frac{\sin 3x}{\sqrt{x+2} - \sqrt{2}}$ ចំ. $6\sqrt{2}$

៨៣. $\lim_{x \rightarrow 0} \frac{\sqrt{1+\sin 2x} - \sqrt{1-\sin 2x}}{x}$ ចំ. 2

៨៤. $\lim_{x \rightarrow 0} \frac{\sqrt{1+x^2} - \cos x}{x^2}$ ចំ. 1

៨៥. $\lim_{x \rightarrow 0} \frac{\sqrt{1+\sin^2 x} - \cos x}{\sin^2 x}$ ចំ. 1

៨៦. $\lim_{x \rightarrow 0} \frac{\sin^2 x}{\sqrt{1+x \sin x} - \cos x}$ ចំ. 1

៨៧. $\lim_{x \rightarrow 0} \frac{\sqrt{x+9} - 3}{\sin 7x}$ ចំ. $\frac{1}{42}$

៨៨. $\lim_{x \rightarrow 0} \frac{\sqrt{1+\sin x} - \sqrt{1-\sin x}}{\tan x}$ ចំ. 1

៨៩. $\lim_{x \rightarrow 0} \frac{\sqrt{2} - \sqrt{1+\cos x}}{\tan^2 x}$ ចំ. $\frac{\sqrt{2}}{8}$

៩០. $\lim_{x \rightarrow \infty} \frac{\sqrt{1+\tan x} - \sqrt{1-\tan x}}{\sin 2x}$

ចំ. $\frac{1}{2}$

៩១. $\lim_{x \rightarrow 0} \frac{2x - \sin x}{\sqrt{1-\cos x}}$

ចំ. $\pm\sqrt{2}$

៩២. $\lim_{x \rightarrow 0} \frac{1 - \sqrt{\cos x}}{\tan^2 x}$

ចំ. $\frac{1}{4}$

៩៣. $\lim_{x \rightarrow 0} \frac{1+x - \cos 2x}{1 - \sqrt{1+\sin x}}$

ចំ. -2

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

ចំ. $\frac{1}{2}$

៩៥. $\lim_{x \rightarrow 0} \frac{\sqrt{1+3\sin x} - \sqrt{1+\sin 3x}}{x^2 \sin x}$

ចំ. 2

៩៦. $\lim_{x \rightarrow 0} \frac{\sqrt{1+\sin 2x} - \sqrt{1+2\sin x}}{x \tan^2 x}$

ចំ. 1

៩៧. $\lim_{x \rightarrow 0} \frac{\sqrt{x+4} - 2}{\sin 5x}$

ចំ. $\frac{1}{20}$

៩៨. $\lim_{x \rightarrow 0} \frac{\sqrt{2x+1} - \sqrt{x+1}}{\sin x}$

ចំ. $\frac{1}{2}$

៩៩. $\lim_{x \rightarrow 0} \frac{\sqrt{2} - \sqrt{1+\cos x}}{\sin^2 x}$

ចំ. $\frac{\sqrt{2}}{8}$

១០០. $\lim_{x \rightarrow 0} \frac{\sqrt{1+x} - \sqrt{1-x}}{\sin 3x}$

ចំ. $\frac{1}{3}$

១០១. $\lim_{x \rightarrow 0} \frac{\sin^2 x}{\sqrt{1+x \sin x} - \cos x}$

ចំ. 1

១០២. $\lim_{x \rightarrow 0} \frac{\sqrt{3x+1} - \sqrt{2x+1}}{\sin x}$

ចំ. $\frac{1}{2}$

១០៣. $\lim_{x \rightarrow 0} \frac{\sqrt{1+x \sin x} - \sqrt{\cos 2x}}{\cot^2 \left(\frac{\pi}{2} - x \right)}$

ចំ. $\frac{3}{2}$

១០៤. $\lim_{x \rightarrow 0} \frac{(\sqrt[3]{x-1} + \sqrt[3]{x+1}) \sin x}{1 - \cos \pi x}$

ចំ. $\frac{4}{3\pi^2}$

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

ចំ. $\frac{1}{4}$

១០៦. $\lim_{x \rightarrow 0} \frac{\sin 2x}{\sqrt{x+1} - 1}$

ចំ. 4

១០៧. $\lim_{x \rightarrow 0} \frac{\sqrt{1+\tan x} - \sqrt{1+\sin x}}{x^3}$

ចំ. $\frac{1}{4}$

១០៨. $\lim_{x \rightarrow 0} \frac{\sin x}{\sqrt[3]{x}}$

ចំ. 0

១០៩. $\lim_{x \rightarrow 0^+} \frac{1 - \cos \sqrt{x}}{\sin x}$

ចំ. $\frac{1}{2}$

១១០. $\lim_{x \rightarrow 0} \frac{1-x - \cos 2x}{1 - \sqrt{1+\sin x}}$

ចំ. 2

១១១. $\lim_{x \rightarrow 0} \frac{1+x - \cos 2x}{1 - \sqrt{1+\sin x}}$

ចំ. -2

១១២. $\lim_{x \rightarrow 0} \frac{\sqrt{2x+1} - \sqrt[3]{x^2-1}}{\sin x}$

ចំ. 1

១១៣. $\lim_{x \rightarrow 0} \frac{1 - \sqrt{2x^2+1}}{1 - \cos x}$

ចំ. -2

១១៤. $\lim_{x \rightarrow 0} \frac{1 - \cos x}{\sqrt{1+x^2} - \sqrt{1-x^2}}$

ចំ. -4

១១៥. $\lim_{x \rightarrow 0} \frac{\cos^4 x - \sin^4 x - 1}{\sqrt{x^2+1} - 1}$

ចំ. -4

១១៦. $\lim_{x \rightarrow 0} \frac{\sqrt{x+9} - 3}{\sin 2015x}$

ចំ. $\frac{1}{12090}$

១១៧. $\lim_{x \rightarrow 0} \frac{\sqrt{3x+1} - \sqrt{2x+1}}{\sin 1000x}$

ចំ. $\frac{1}{2000}$



របៀបគណនាលីមីត

✓ កំណើត $x \rightarrow \alpha$ តាង $X = x - \alpha$ នោះ $x = \alpha + X$ បើ $x \rightarrow \alpha$ នោះ $X \rightarrow 0$

✓ រូបមន្តដែលទាក់ទង

❖ $\cos\left(\frac{\pi}{2} - \theta\right) = \sin \theta, \cos\left(\frac{\pi}{2} + \theta\right) = -\sin \theta$

❖ $\sin\left(\frac{\pi}{2} - \theta\right) = \cos \theta, \sin\left(\frac{\pi}{2} + \theta\right) = \cos \theta$

❖ $\sin(k\pi + \alpha) = \begin{cases} \sin \alpha & \text{បើ } k \text{ គូ} \\ -\sin \alpha & \text{បើ } k \text{ សេស} \end{cases}$

❖ $\cos(k\pi + \alpha) = \begin{cases} \cos \alpha & \text{បើ } k \text{ គូ} \\ -\cos \alpha & \text{បើ } k \text{ សេស} \end{cases}$

១១៨. $\lim_{x \rightarrow \frac{\pi}{2}} \frac{\cos x}{x - \frac{\pi}{2}}$ ចំ. -1

១១៩. $\lim_{x \rightarrow 1} \frac{\sin \pi x}{x - 1}$ ចំ. $-\pi$

១២០. $\lim_{x \rightarrow 2} \frac{4 - x^2}{\sin \pi x}$ ចំ. $-\frac{4}{\pi}$

១២១. $\lim_{x \rightarrow 1} \frac{\tan \pi x}{1 - x}$ ចំ. $-\pi$

១២២. $\lim_{x \rightarrow \pi} \frac{1 - \sin \frac{x}{2}}{(\pi - x)^2}$ ចំ. $\frac{1}{8}$

១២៣. $\lim_{x \rightarrow \pi} \frac{\sin 3x}{\sin 4x}$ ចំ. $-\frac{3}{4}$

១២៤. $\lim_{x \rightarrow \pi} \frac{\sin 10\pi x}{\sin 15\pi x}$ ចំ. $-\frac{2}{3}$

១២៥. $\lim_{x \rightarrow \pi} \frac{\sin^2 3x}{\sin^2 2x}$ ចំ. $\frac{9}{4}$

១២៦. $\lim_{x \rightarrow \frac{\pi}{2}} \frac{1 - \sin x}{(2x - \pi)^2}$ ចំ. $\frac{1}{8}$

១២៧. $\lim_{x \rightarrow \pi} \frac{1 + \cos}{(x - \pi)^2}$ ចំ. $\frac{1}{2}$

១២៨. $\lim_{x \rightarrow \frac{\pi}{6}} \frac{\sin 3x - 1}{(6x - \pi)^2}$ ចំ. $-\frac{1}{8}$

១២៩. $\lim_{x \rightarrow \frac{\pi}{2}} \frac{1 + \cos 2x}{\left(\frac{\pi}{2} - x\right)^2}$ ចំ. 2

១៣០. $\lim_{x \rightarrow \frac{\pi}{4}} \frac{1 + \cos 4x}{(\pi - 4x)^2}$ ចំ. $\frac{1}{2}$

១៣១. $\lim_{x \rightarrow 1} \frac{\cos \frac{\pi}{2} x}{(1 - \sqrt{x})}$ ចំ. π

១៣២. $\lim_{x \rightarrow 1} (1 - x) \tan \frac{\pi}{2} x$ ចំ. $\frac{2}{\pi}$

១៣៣. $\lim_{x \rightarrow \pi} \tan x \tan \frac{x}{2}$ ចំ. -2

១៣៤. $\lim_{x \rightarrow \frac{\pi}{2}} \left(\frac{1}{\cos x} - \tan x \right)$ ចំ. 0

១៣៥. $\lim_{x \rightarrow \frac{\pi}{6}} \frac{1 - 2 \sin x}{\sin\left(\frac{\pi}{6} - x\right)}$ ចំ. $\sqrt{3}$

១៣៦. $\lim_{x \rightarrow \frac{\pi}{2}} (1 + \cos 2x) \tan x$ ចំ. 0

១៣៧. $\lim_{x \rightarrow \frac{\pi}{4}} \frac{1 - \tan x}{1 - \cot x}$ ចំ. -1

១៣៨. $\lim_{x \rightarrow \frac{\pi}{4}} \frac{\sin x - \cos x}{1 - \tan x}$ ចំ. $-\frac{\sqrt{2}}{2}$

១៣៩. $\lim_{x \rightarrow \frac{\pi}{3}} \frac{\tan^3 x - 3 \tan x}{\cos\left(x + \frac{\pi}{6}\right)}$ ចំ. -24

១៤០. $\lim_{x \rightarrow \frac{\pi}{6}} \frac{2 \sin^2 x + \sin x - 1}{2 \sin^2 x - 3 \sin x + 1}$ ចំ. -3

១៤១. $\lim_{x \rightarrow 1} \frac{x^3 + x^2 - 2}{\sin(x - 1)}$ ចំ. 5

១៤២. $\lim_{x \rightarrow \frac{\pi}{6}} \frac{2 \sin^2 x - 3 \sin x + 1}{4 \sin^2 x - 1}$ ចំ. $-\frac{1}{4}$

១៤៣. $\lim_{x \rightarrow \frac{\pi}{2}} \left(\frac{\pi}{2} - x \right) \tan x$ ចំ. 1

១៤៤. $\lim_{x \rightarrow 1} \frac{\sin(x - 1)}{x^{2017} - 1}$ ចំ. $\frac{1}{2017}$

១៤៥. $\lim_{x \rightarrow a} \frac{\sin(x - a)}{x^5 - a^5}$ ចំ. $\frac{1}{5a^4}$

១៤៦. $\lim_{x \rightarrow 2} \frac{\sin(x - 2)}{x^3 - 8}$ ចំ. $\frac{1}{12}$

១៤៧. $\lim_{x \rightarrow \frac{\pi}{3}} \frac{\sqrt{3} \cos x - \sin x}{\sin 3x}$ ចំ. $\frac{1}{3}$

១៤៨. $\lim_{x \rightarrow \frac{\pi}{4}} \frac{\cos x - \sin x}{1 - \sqrt{2} \cos x}$ ចំ. $-\sqrt{2}$

୧୮୫. $\lim_{x \rightarrow \frac{\pi}{3}} \left(\frac{x}{2} - \frac{\pi}{3} \cos x \right) \frac{1}{x - \frac{\pi}{3}}$

୧୮୬. $\frac{3 + \pi\sqrt{3}}{6}$