Nama : Veronika G Bisararisi

Kelas : XII MIPA 6

MTK MINAT

1). $\lim_{x \to 0} \frac{\sin 4x}{\tan(-5x)}$ adalah ...

$= \lim_{x \to 0} \frac{\frac{d}{dx}(\sin(4x))}{\frac{d}{dx}(\tan(-5x))}$

$= \lim_{x \to 0} \frac{4\cos(4x)}{-5\sec^2(-5x)}$

$= \frac{4\cos(4.0)}{-5\sec^2(-5.0)}$

$= \frac{4 \cdot \cos 0}{-5\sec^2 0} = \frac{4.1}{-5.1} = -\frac{4}{5}$

2) $\lim_{x \to 0} \frac{\sin 7x}{3x - \tan 2x}$ adalah ...

$= \lim_{x \to 0} \frac{7\cos 7x}{3 - 2\sec^2 2x}$

$= \frac{7.\cos 0}{3 - 2.\sec^2 0} = \frac{7.1}{3-2.1} = \frac{7}{3-2} = 7$

3). $\lim_{x \to 0} \frac{\sin 4x + \sin 6x}{\sin 2x}$ adalah ...

$= \lim_{x \to 0} \frac{\sin 4x}{\sin 2x} + \frac{\sin 6x}{\sin 2x}$

$= \frac{4}{2} + \frac{6}{2}$

$= 2 + 3 = 5$

4) $\lim_{x \to 1} \frac{(x^2 - 1)\sin 2(x-1)}{-2\sin^2(x-1)}$ adalah ...

$= \lim_{x \to 1} \frac{(x-1)(x+1) \cdot 2\sin(x-1)\cos(x-1)}{-2\sin(x-1)\sin(x-1)}$

$= \frac{(x-1)(x+1)(2)}{-2}$

$= \frac{0(2)(2)}{-2} = 0$

Dipindai dengan CamScanner

5) $\lim_{x \to \frac{\pi}{2}} |\pi - 2x| \tan x$ adalah ...

$= \lim_{x \to \frac{\pi}{2}}$ misal $y = x - \frac{\pi}{2} \Rightarrow x = y + \frac{\pi}{2}$

$y = \frac{\pi}{2} \Rightarrow y = 0$

$= \lim_{y \to 0} |\pi - 2(y + \frac{\pi}{2})| \tan (\frac{\pi}{2} + y)$

$= |\pi - 2y + \pi| \tan |\frac{\pi}{2} + y|$

$= |-2y| \tan |\frac{\pi}{2} + y|$

$= |-2y| \; |-\cot y|$

$= \frac{|-2y|}{-\tan y} = \frac{-2}{-1} = 2$

Dipindai dengan CamScanner