No.: Tugas MTK Peminatan Date:

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

$\lim_{x \to 0} \frac{\cancel{\sin 4x}}{\cancel{\tan(-5x)}} \cdot \frac{4x}{\cancel{4x}} \cdot \frac{\cancel{-5x}}{-5x}$

$\lim_{x \to 0} \frac{\sin 4x}{4x} \cdot \frac{-5x}{\tan(-5x)} \cdot \frac{4\cancel{x}}{-5\cancel{x}}$

$= 1 \cdot 1 \cdot -\frac{4}{5} = -\frac{4}{5}$

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

$= \dfrac{\dfrac{\sin 4x}{x} + \dfrac{\sin 6x}{x}}{\dfrac{\sin 2x}{x}}$

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

$= \frac{10}{2}$

$= 5$ //

OKEY

No.: Date:

2) $\lim_{x \to 0} \dfrac{\sin 7x}{3x - \tan 2x}$

$= \dfrac{\dfrac{\sin 7x}{x}}{\dfrac{3x}{x} - \dfrac{\tan 2x}{x}} = \dfrac{7}{3-2} = \dfrac{7}{1} = 7$

4) $\lim_{x \to 1} \dfrac{(x^2-1)\sin 2(x-1)}{-2\sin^2(x-1)}$

$\lim_{x \to 1} \dfrac{(x-1)(x+1)\sin 2(x-1)}{-2\sin(x-1)\sin(x-1)}$

$\lim_{x \to 1} \dfrac{(x+1)}{-2} \cdot \dfrac{(x-1)}{\sin(x-1)} \cdot \dfrac{\sin 2(x-1)}{(x-1)}$

$= \dfrac{(1+1)}{-2} \cdot 1 \cdot 2$

$= \dfrac{2}{-2} \cdot 2$

$= -2$

No.: Date:

5) $\lim_{x \to \frac{\pi}{2}} (\pi - 2x) \tan x \ldots$

$\lim_{x \to \frac{\pi}{2}} (\pi - 2x) \frac{\sin x}{\cos x}$

$\lim_{x \to \frac{\pi}{2}} \sin x \frac{(\pi - 2x)}{\cos x}$

* $\lim_{x \to \frac{\pi}{2}} \sin x$

$\sin\left(\frac{\pi}{2}\right) = \sin\left(\frac{180}{2}\right) = \sin 90 = 1$

* $\lim_{x \to \frac{\pi}{2}} \frac{\pi - 2x}{\cos x} = \frac{\pi - 2\left(\frac{\pi}{2}\right)}{\cos \frac{\pi}{2}} = \frac{0}{0}$

$= 1 \cdot \lim_{x \to \frac{\pi}{2}} \frac{-2}{-\sin x}$

$= 1 \cdot \lim_{x \to \frac{\pi}{2}} \frac{2}{\sin x}$

OKEY

$= 1 \cdot \frac{2}{1} = 2$ //