ASESMEN SUMATIF HARIAN
LIMIT FUNGSI
MATEMATIKA TINGKAT LANJUT KELAS XII

Kode soal A

Nama :_____
Kelas : XII I

BAGIAN 1: Pilihlah jawaban yang paling tepat!

1. Nilai dari $\lim_{x\to\infty} \sqrt{4x^2-5x+6} - \sqrt{4x^2+3x-7}$ adalah ....

2. Hitunglah nilai dari $\lim_{x\to 2} \frac{x^2-4}{x-2}$!

3. $\lim_{x\to\infty} \frac{4x^6+x^5+3x^4-5x^3-x^2+x-8}{2x^6+4x^5+3x^4-4x^2+x-7} = \cdots$

4. Nilai dari $\lim_{x\to 3} \frac{\sqrt{x^2-5}-2}{3x-9}$ adalah....

5. Nilai limit dari $\lim_{x\to 2} \frac{(3x-6)+\sin(5x-10)}{\tan(2x-4)}$ adalah....

6. $\lim_{x\to\infty} \sqrt{4x^2+7x+11} - 2x + 1 = \cdots$

7. $\lim_{x\to\infty} \sqrt{4x^2+5x-3} - \sqrt{x^2-2x+7} = \cdots$

8. $\lim_{x\to\infty} \frac{4x^5+x^4+2x^3-x+2}{2x^3+3x^4+4x^2+x-7} = \cdots$

9. Nilai dari $\lim_{x\to\infty} \frac{6x^5+3x^4-5x^3-x^2+4x+12}{3x^4+2x^3-3x^5-4x^2+x-7} = \cdots$

10. Hasil dari $\lim_{x\to\infty} \sqrt{2x^2+7x-3} - \sqrt{3x^2+6x+9} = \cdots$

11. $\lim_{x\to\infty} \sqrt{2x-5} - \sqrt{x+6} = \cdots$

12. $\lim_{x\to\infty} \sqrt{4x+12} - \sqrt{4x-6} = \cdots$

13. Nilai dari $\lim_{x\to\infty} \frac{5x^3-x^2+4x+12}{2x^3-3x^5+x-7} = \cdots$

14. $\lim_{x\to 0} \frac{3x+\sin 5x}{\tan 2x} = \cdots$

15. $\lim_{x\to\infty} \frac{6x^4-5x^3-4x^2+7x-1}{2x^3+3x^4-4x^2+7x-5} = \cdots$

16. Diketahui $\lim_{x\to c} f(x) = -2$ dan $\lim_{x\to c} g(x) = 5$, tentukan nilai dari $\lim_{x\to c} \frac{\sqrt{f^2(x)+g(x)}+6}{f(x)+g(x)}$!

17. Nilai dari $\lim_{x\to\infty} \frac{4x^2+x^3+3x^4-32}{3x^4+5x^3-4x^2+x-7} = \cdots$

18. Hitunglah! $\lim_{x\to\infty} \sqrt{x^2+2x+1} - x - 4$

19. $\lim_{x\to\infty} \frac{x^4-4x^2+7x-1}{2x^3-4x^2+7x-5} = \cdots$

20. Hitunglah nilai dari $\lim_{x\to 0} \frac{3x.\sin 5x}{1-\cos 4x}$

Bagian 2: Lengkapilah!

No. 1

$$\lim_{x\to -3} \frac{2-2\cos(2x+6)}{x^2+6x+9} = \lim_{x+3\to -3+3} \frac{2-2\cos \ldots\ldots (x+\cdots\ldots)}{(x+\cdots\ldots)^2}$$

Misal: $x+\cdots\ldots = a$ maka;

$$\lim_{a\to 0} \frac{2-2\cos \ldots\ldots a}{a^2} = \lim_{a\to 0} \frac{2-2(1-\cdots\ldots\ sin^2 a)}{a^2}$$

$$= \lim_{a\to 0} \frac{2-2+\cdots\ldots\ sin^2 a}{a^2}$$

$$= \cdots.. \left(\lim_{a\to 0} \frac{\sin a}{a}\right)^2 = \cdots.. \left(\frac{1}{1}\right)^2 = \cdots..$$

No. 2

$$\lim_{x\to 5}\frac{x^2-2x-15}{2x-10}=\frac{\ldots.^2-2(\ldots.)-15}{2(\ldots\ldots)-10}=\frac{0}{0}$$

Maka:

$$\lim_{x\to 5}\frac{(x+\cdots..)(x-\cdots..)}{\ldots..(x-\cdots..)}=\lim_{x\to 5}\frac{x+\cdots..}{\ldots..}=\frac{5+\cdots..}{\ldots\ldots}=\cdots\ldots$$

No. 3

Diketahui: $\lim_{x\to c} f(x)=-5$ dan $\lim_{x\to c} g(x)=8$

Selesaikan!

$$\lim_{x\to c}\frac{\sqrt{g(x)-2f(x)-2}}{g(x)-6}=\frac{\lim_{x\to c}\sqrt{g(x)-2f(x)-2}}{\lim_{x\to c} g(x)-6}=\frac{\sqrt{\lim_{x\to c} g(x)-\cdots\ldots\lim_{x\to c} f(x)-\lim_{x\to c}\ldots\ldots}}{\lim_{x\to c} g(x)-\lim_{x\to c}\ldots\ldots}=\frac{\sqrt{\ldots\ldots-\cdots\ldots(-5)-2}}{\ldots\ldots\ldots-\cdots\ldots\ldots}=\frac{\sqrt{\ldots\ldots\ldots}}{2}=\cdots$$