Popuniti odmah!

IME I PREZIME: JURE SUIĆIĆ BROJ INDEKSA: 17-2-0043-2010-

DATUM: VRIJEME: OD 14:15 DO 15:40 .

MATEMATIKA 1: Trajanje 100 minuta. Zabranjen je razgovor sa drugim studentima. ZADATKE RIJEŠAVATE JEDNOSTRANO NA PAPIRE KOJE DOBIJETE OD NASTAVNIKA.

ooox

Broj ↓ bodova

1. Odrediti determinantu matrice $A = \begin{bmatrix} 1 & 2 & 0 & 0 & 0 \\ 2 & 1 & 2 & 0 & 0 \\ 0 & 2 & 1 & 2 & 0 \\ 0 & 0 & 2 & 1 & 2 \\ 0 & 0 & 0 & 2 & 1 \end{bmatrix}$ — ~~0~~

2. Odrediti domenu i sve asimptote funkcije $f(x) = x - \sqrt{x^2 + x + 1}$ — 5

3. Ispitati konvergenciju reda $\sum \left(\frac{2n^2 + 3n + 4}{\frac{1}{n} + 2n + 3n^2} \right)^n$ — ~~0~~

4. Ispitati domenu, periodičnost, parnost i prvu derivaciju funkcije $g(x) = \ln(\cos(2x))$. — ~~0~~

5. Na temelju ispitivanja toka funkcije napraviti skicu grafa funkcije $h(x) = \frac{x^2 + 1}{x^2 + 2}$. — ~~0~~

UKUPNO: 5

UNATOČ MALOM BROJU BODOVA MALO VAM NEDOSTAJE DA PRODETE PISMENI.

VJEŽBAJTE TRAŽENJE DOMENE, ASIMPTOTA I DERIVIRANJE KOMPOZICIJE FUNKCIJE.

IME I PREZIME: JURE SVILIĆ BROJ INDEKSA: 17-2-0043-2010-

1. $\begin{vmatrix} 1 & 2 & 0 & 0 & 0 \\ 2 & 1 & 2 & 0 & 0 \\ 0 & 2 & 1 & 2 & 0 \\ 0 & 0 & 2 & 1 & 2 \\ 0 & 0 & 0 & 2 & 1 \end{vmatrix} = 1 \begin{vmatrix} 1 & 2 & 0 & 0 \\ 2 & 1 & 2 & 0 \\ 0 & 2 & 1 & 2 \\ 0 & 0 & 2 & 1 \end{vmatrix} - 2 \begin{vmatrix} 2 & 0 & 0 & 0 \\ 2 & 1 & 2 & 0 \\ 0 & 2 & 1 & 2 \\ 0 & 0 & 2 & 1 \end{vmatrix} =$

$= 1 \cdot \left(1 \underbrace{\begin{vmatrix} 1 & 2 & 0 \\ 2 & 1 & 2 \\ 0 & 2 & 1 \end{vmatrix}}_{-7} - 2 \underbrace{\begin{vmatrix} 2 & 0 & 0 \\ 2 & 1 & 2 \\ 0 & 2 & 1 \end{vmatrix}}_{-6} \right) - 2 \left(2 \underbrace{\begin{vmatrix} 1 & 2 & 0 \\ 2 & 1 & 2 \\ 0 & 2 & 1 \end{vmatrix}}_{-7} - 2 \underbrace{\begin{vmatrix} 0 & 0 & 0 \\ 2 & 1 & 2 \\ 0 & 2 & 1 \end{vmatrix}}_{0} \right) =$

$\begin{vmatrix} 1 & 2 & 0 \\ 2 & 1 & 2 \\ 0 & 2 & 1 \end{vmatrix} = 1+0+0-0-4-4 = -7$

$\begin{vmatrix} 2 & 0 & 0 \\ 2 & 1 & 2 \\ 0 & 2 & 1 \end{vmatrix} = 2+0+0-0-8-0 = -6$

$\begin{vmatrix} 0 & 0 & 0 \\ 2 & 1 & 2 \\ 0 & 2 & 1 \end{vmatrix} = 0$

$= 1 \cdot \left(1 \cdot (-7) - 2 \cdot (-6) \right) - 2 \left(2 \cdot (-7) - 2 \cdot 0 \right) =$ ✓

$= 1 \cdot 5 - 2 \cdot (-7) = 5 + 14 = 19$ ✗

DET. A = 19

IME I PREZIME: JURE SUILIČIĆ BROJ INDEKSA: 17-2-0043-2010-

2.) $x - \sqrt{x^2 - x + 1}$

$x^2 - x + 1 \geq 0$

$x_{1,2} = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

$x_{1,2} = \frac{+1 \pm \sqrt{1 - 4 \cdot 1 \cdot 1}}{2 \cdot 1}$

$x_{1,2} = \frac{1 \pm \sqrt{-3}}{2}$

$x_1 = \frac{1 + i\sqrt{3}}{2}$ $D(f) = ?$

$\lim_{x \to \infty} x - \sqrt{x^2 + x + 1} = \frac{(x - \sqrt{x^2+x+1})(x + \sqrt{x^2+x+1})}{(x + \sqrt{x^2+x+1})} =$

$= \frac{x^2 + x\sqrt{x^2+x+1} - x\sqrt{x^2+x+1} - x^2 - x - 1}{x + \sqrt{x^2+x+1}} =$

$= \frac{-x - 1}{x + \sqrt{x^2+x-1}} = \frac{\frac{-x}{x} - \frac{1}{x}}{\frac{x}{x} + \sqrt{\frac{x^2}{x} + \frac{x}{x} - \frac{1}{x}}} = -\frac{1}{2}$ 5

H. A.	$y = -\frac{1}{2}$

DESNA HORIZONTALNA MOŽE POSTOJATI! LIJEVA KOSA!

NEMA KOSE ASIMPTOTE JER POSTOJI HORIZONTALNA

3.) $\sum \left(\frac{2n^2 + 3n + 4}{\frac{1}{n} + 2n + 3n^2} \right)^n =$

NUŽNI

$\left(1 + \frac{2n^2 + 3n + 4}{\frac{1}{n} + 2n + 3n^2} - 1 \right)^n = \left[\left(1 + \frac{1}{\frac{\frac{1}{n} + 2n + 3n^2}{2n^2 - \frac{1 - 2n^2}{n} + 4}} \right) \right]^{n \cdot \frac{2n^2 - \frac{1-2n^2}{n} + 4}{\frac{1}{n} + 2n + 3n^2}}$

$= \frac{-n^2 + n + 4 - \frac{1}{n}}{\frac{1}{n} + 2n + 3n^2} \xrightarrow{n \to \infty} -\frac{1}{3}$

$= e^{\infty}$

$\frac{2n^2 - \frac{n - 2n^3}{n} + 4n}{\frac{1}{n} + 2n + 3n^2} =$

$= \frac{\frac{2n^3}{n^3} - \frac{n - 2n^3}{n^3} + \frac{4n}{n^3}}{\frac{1}{n^3} + \frac{2n}{n^3} + \frac{3n^2}{n^3}} = \frac{2}{0} = +\infty$

$\neq e$

$\neq 0$

RED $\sum \left(\frac{2n^2 + 3n + 4}{\frac{1}{n} + 2n + 3n^2} \right)^n \neq 0$

DIVERGIRA

VIDA KRITERIJ CAUCHY.

$\lim_{n \to \infty} \left(1 + \frac{1}{n}\right)^n = e$

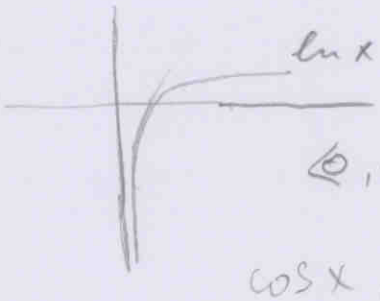
KOD VAS:

$\lim_{n \to \infty} \left(1 + \frac{1}{-3} \right)^n = \lim_{n \to \infty} \left(1 - \frac{1}{3}\right)^n = \lim_{n \to \infty} \left(\frac{2}{3}\right)^n = 0$

NUŽNI UVJET ISPUNJEN!

IME I PREZIME: JURE SVILIČIĆ BROJ INDEKSA: 17-2-0043-2010

(4.) $g(x) = \ln\left(\cos(2x)\right)$



$\cos x \langle -\infty, +\infty \rangle$

DOMENA

$\mathcal{D}(f) \langle 0, +\infty \rangle$ ✗

PARNOST

$f(x) = f(-x)$

$\ln\left(\cos(2x)\right) \neq \ln\left(\cos(-2x)\right)$

FUNKCIJA NIJE PARNA ✗

$(\ln x)' = \frac{1}{x}$

$(\cos x)' = -\sin x$

$g'(x) = \left[\ln\left(\cos(2x)\right)\right]' =$

$= \frac{1}{\cos(2x)} \cdot \left(\cos(2x)\right)' = \frac{1}{\cos(2x)} \cdot \left(-\sin(2x)\right)$ ✗

$= \frac{-\sin(2x)}{\cos(2x)}$

VIDI CVAR

IME I PREZIME: JURE ŠVILČIĆ BROJ INDEKSA: 17-2-0043-2010

5. $h(x) = \frac{x^2+1}{x^2+2}$

DOMENA

$x^2+2 \neq 0$

$D(f) \langle -\infty, 2 \rangle \cup \langle -2, 2 \rangle \cup \langle 2, +\infty \rangle$ ✗

ASIMPTOTE

$\lim_{x \to \infty} \frac{x^2+1}{x^2+2} = \frac{\frac{x^2}{x^2} + \frac{1}{x^2}}{\frac{x^2}{x^2} + \frac{2}{x^2}} = \frac{1}{1} = 1$ | H.A | $y = 1$ ✓

$\lim_{x \to 2} \frac{x^2+1}{x^2+2} = \frac{4+1}{4+2} = \frac{5}{6}$

$\lim_{x \to -2} \frac{x^2+1}{x^2+2} = \frac{5}{6}$

NEMA VERTIKALNE ASIMPTOTE

ZAŠTO ONDA NA SKICI GRAFA CRTATE VERTIKALNU ASIMPTOTU ?

PARNOST

$f(x) = f(-x)$

$\frac{x^2+1}{x^2+2} = \frac{-x^2+1}{-x^2+2} = \frac{x^2+1}{x^2+2}$ ✓

FUNKCIJA JE PARNA

DERIVACIJA

$h'(x) = \left(\frac{x^2+1}{x^2+2}\right)' = \frac{(x^2+1)' \cdot x^2+2 - (x^2+1) \cdot (x^2+2)'}{(x^2+2)^2} = \frac{2x(x^2+2) - (x^2+1)\,2x}{(x^2+2)^2}$

$= \frac{2x^3 + 4x - 2x^3 - 2x}{(x^2+2)^2} = \frac{2x}{(x^2+2)^2}$

$h''(x) = \frac{2x}{(x^2+2)^2} = \frac{(2x)' \cdot (x^2+2)^2 - 2x\left((x^2+2)^2\right)'}{(x^2+2)^4} =$

$= \frac{2(x^2+2)^2 - 2x \cdot (2x^2 + 4 \cdot 2x)}{(x^2+2)^4}$

$\left[(x^2+2)^2\right]' =$

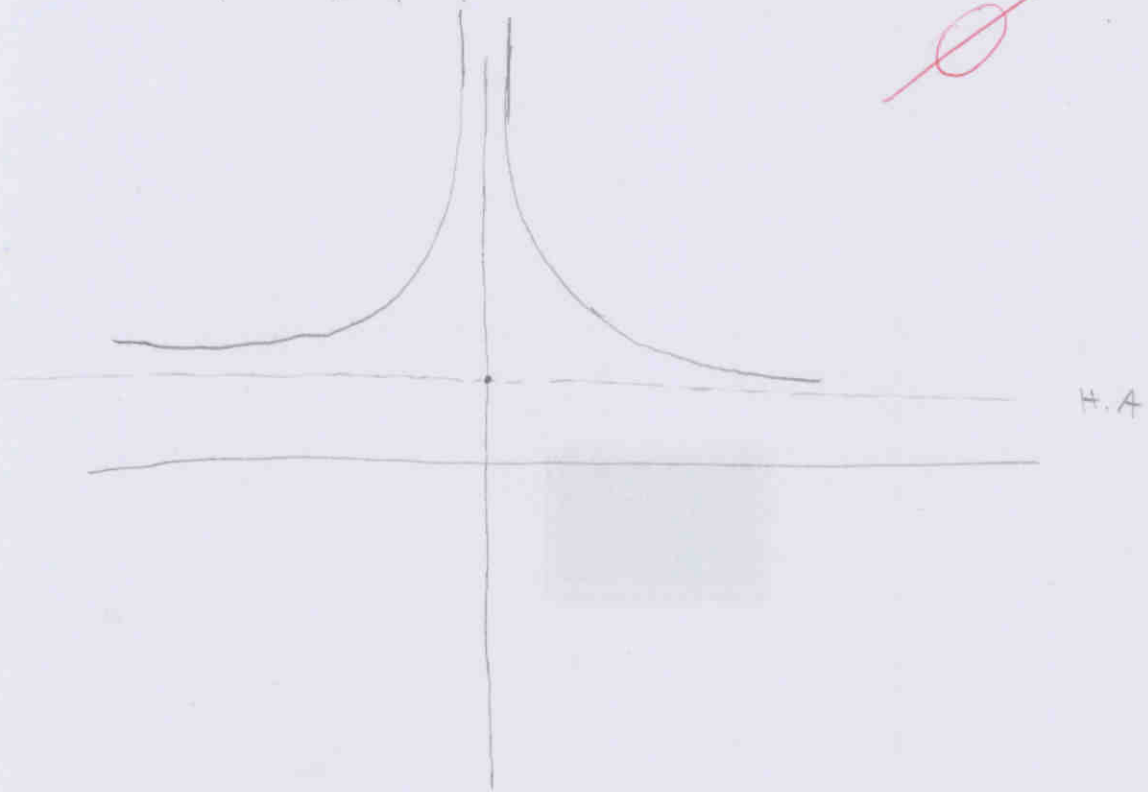
$= 2(x^2+2) \cdot 2x$

$=$

IME I PREZIME: JURE SVILIČIĆ BROJ INDEKSA: 17-2-0043-2010-

(5.) GRAF

	$-\infty$	-2	1	2	$+\infty$
f'	$-$	$-$	$+$	$+$	
f''	$+$	$+$	$-$	$-$	
$f(x)$	∪	∪	∩	∩	



Popuniti odmah!

IME I PREZIME: DENI MILETIĆ BROJ INDEKSA: 57143

DATUM: 10.02.2011. VRIJEME: OD 12.00 DO 13:20 .

MATEMATIKA 1: Trajanje 100 minuta. Zabranjen je razgovor sa drugim studentima. ZADATKE RIJEŠAVATE JEDNOSTRANO NA PAPIRE KOJE DOBIJETE OD NASTAVNIKA. ooox

Broj ↓ bodova

1. Odrediti determinantu matrice $A = \begin{bmatrix} 1 & 2 & 0 & 0 & 0 \\ 2 & 1 & 2 & 0 & 0 \\ 0 & 2 & 1 & 2 & 0 \\ 0 & 0 & 2 & 1 & 2 \\ 0 & 0 & 0 & 2 & 1 \end{bmatrix}$

2. Odrediti domenu i sve asimptote funkcije $f(x) = x - \sqrt{x^2 + x + 1}$

3. Ispitati konvergenciju reda $\sum \left(\frac{2n^2 + 3n + 4}{\frac{1}{n} + 2n + 3n^2} \right)^n$

4. Ispitati domenu, periodičnost, parnost i prvu derivaciju funkcije $g(x) = \ln(\cos(2x))$.

5. Na temelju ispitivanja toka funkcije napraviti skicu grafa funkcije $h(x) = \frac{x^2 + 1}{x^2 + 2}$.

5. $h(x) = \frac{x^2+1}{x^2+2}$

1. $D = \mathbb{R}$ ✓

2. nul točke

$x^2+1=0 \Rightarrow x^2=-1$ => graf nema nul točke pošto nijedan dijelom realnog skupa ✓

4. asimptote

vertikalna asimptota je definirana u točkama prekida -1 i 1. KAKVE TOČKE PREKIDA? $D(f) = \mathbb{R}$

horizontalna i kosa; $y = kx + l$

$k = \lim_{x \to \infty} \frac{h(x)}{x} = \frac{\frac{x^2+1}{x^3+2}}{\frac{x}{1}} = \frac{x^2+1}{x(x^2+2)} : \frac{x^2+1}{x^3+2} : \frac{x^3}{x^3} = \frac{0}{1} = 0$

$l = \lim_{x \to \infty} [h(x) - kx] = \lim_{x \to \infty} \left(\frac{x^2+1}{x^2+2} - 0 \right) = \lim_{x \to \infty} \frac{1}{1} = 1$

$y = kx + l = 0 + 1 = 1$ -> graf ima horizontalnu asimptotu ✓

IME I PREZIME: DENIS MICETIĆ BROJ INDEKSA:

4. $g(x) = \ln(\cos(2x))$

$g'(x) = \frac{1}{\cos 2x} + 2\sin(2x)$ ✗

$D_f(\ln) = \langle 0, +\infty \rangle$

$V_f(\sin) : [-1, 1]$

$D(g) = ?$

VIDI ANTE DUŠEVIĆ.

2. $f(x) = x - \sqrt{x^2 + x + 1}$

$D_f = \mathbb{R} \setminus \{1\}$ ✗

nema asimptota ✗

1. $\begin{bmatrix} 1 & 2 & 0 & 0 & 0 \\ 2 & 1 & 2 & 0 & 0 \\ 0 & 2 & 1 & 2 & 0 \\ 0 & 0 & 2 & 1 & 2 \\ 0 & 0 & 0 & 2 & 1 \end{bmatrix} = 1 \cdot \begin{bmatrix} 1 & 2 & 0 & 0 \\ 2 & 1 & 2 & 0 \\ 0 & 2 & 1 & 2 \\ 0 & 0 & 2 & 1 \end{bmatrix} - 2 \cdot \begin{bmatrix} 2 & 2 & 0 & 0 \\ 0 & 1 & 2 & 0 \\ 0 & 2 & 1 & 2 \\ 0 & 0 & 2 & 1 \end{bmatrix} + 0 \begin{bmatrix} 2 & 1 & 0 & 0 \\ 0 & 2 & 2 & 0 \\ 0 & 0 & 1 & 2 \\ 0 & 0 & 2 & 1 \end{bmatrix} - 0 \begin{bmatrix} 2 & 1 & 2 & 0 \\ 0 & 1 & 2 & 0 \\ 0 & 0 & 2 & 2 \\ 0 & 0 & 0 & 1 \end{bmatrix}$

$+ 0 \cdot \begin{bmatrix} 2 & 1 & 2 & 0 \\ 0 & 2 & 1 & 2 \\ 0 & 0 & 2 & 1 \\ 0 & 0 & 0 & 2 \end{bmatrix} = 1 \cdot \begin{bmatrix} 1 & 2 & 0 \\ 2 & 1 & 2 \\ 0 & 2 & 1 \end{bmatrix} - 2 \cdot \begin{bmatrix} 2 & 2 & 0 \\ 0 & 1 & 2 \\ 0 & 2 & 1 \end{bmatrix} - 4 \begin{bmatrix} 1 & 2 & 0 \\ 2 & 1 & 2 \\ 0 & 2 & 1 \end{bmatrix} + 4 \cdot \begin{bmatrix} 0 & 2 & 0 \\ 0 & 1 & 2 \\ 0 & 2 & 1 \end{bmatrix} =$

$= 1 \begin{bmatrix} 1 & 2 \\ 2 & 1 \end{bmatrix} - 4 \begin{bmatrix} 1 & 2 \\ 2 & 1 \end{bmatrix} - 4 \begin{bmatrix} 1 & 2 \\ 2 & 1 \end{bmatrix} = -4 + 16 + 16 = 28$ ✗

IME I PREZIME: DENI MILETIĆ BROJ INDEKSA: 57143

5. stacionarne točke

$$f'(x) = \frac{2x(x^2+2) - 2x(x^2+1)}{(x^2+2)^2} = \frac{2x^3+4x-2x^3-2x}{(x^2+2)^2} = \frac{2x}{(x^2+2)^2}$$

$x=0 \Rightarrow 2x=0 = x=0$

$$f(0) = \frac{0^2+1}{0^2+2} = \frac{1}{2} \Rightarrow \text{stacionarna točka je } (0, \tfrac{1}{2}) \checkmark$$

MIN ILI MAX?

6. monotonost

	$-\infty$		0		$+\infty$
f'		$-$		$+$	
f		↘		↗	

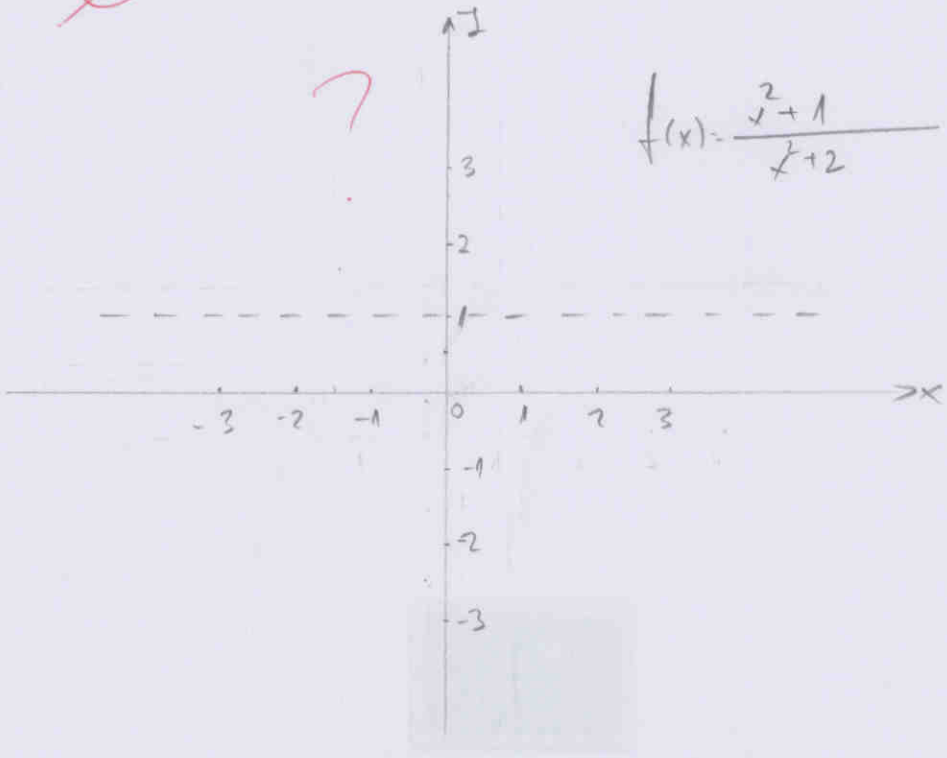
7. ekstremi

$$f''(x) = \frac{2(x^2+2)^2 - 2x(4x^3+8x)}{(x^2+2)^4} = \frac{2(x^4+4x^2+4) - 8x^4 - 16x^2}{(x^2+2)^4} = \frac{2x^4+8x^2+8-8x^4-16x^2}{(x^2+2)^4} = \frac{-6x^4-8x^2+8}{(x^2+2)^4}$$

$$= \frac{2(-3x^4-4x^2+4)}{(x^2+2)^4}$$

$$f''(0) = \frac{2(-3\cdot 0 - 4\cdot 0 + 4)}{2^4} = \frac{8}{16} = \frac{1}{2} > 0 \quad \text{m.r. } S.T(0, \tfrac{1}{2})$$

IME I PREZIME: DENIS MILETIĆ BROJ INDEKSA:



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

VIDI CVAR

Popuniti odmah!

IME I PREZIME: ŠIME MATANOVIĆ BROJ INDEKSA: 57655

DATUM: 10.2.2021. VRIJEME: OD 13:30 DO 14:44

MATEMATIKA 1: Trajanje 100 minuta. Zabranjen je razgovor sa drugim studentima. ZADATKE RIJEŠAVATE JEDNOSTRANO NA PAPIRE KOJE DOBIJETE OD NASTAVNIKA.

ooox

Broj ↓ bodova

1. Odrediti determinantu matrice $A = \begin{bmatrix} 1 & 2 & 0 & 0 & 0 \\ 2 & 1 & 2 & 0 & 0 \\ 0 & 2 & 1 & 2 & 0 \\ 0 & 0 & 2 & 1 & 2 \\ 0 & 0 & 0 & 2 & 1 \end{bmatrix}$

2. Odrediti domenu i sve asimptote funkcije $f(x) = x - \sqrt{x^2 + x + 1}$

3. Ispitati konvergenciju reda $\sum \left(\frac{2n^2 + 3n + 4}{\frac{1}{n} + 2n + 3n^2} \right)^n$

4. Ispitati domenu, periodičnost, parnost i prvu derivaciju funkcije $g(x) = \ln(\cos(2x))$.

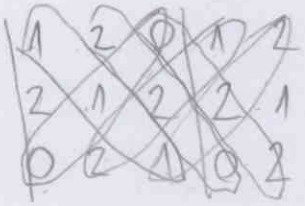
5. Na temelju ispitivanja toka funkcije napraviti skicu grafa funkcije $h(x) = \frac{x^2 + 1}{x^2 + 2}$.

IME I PREZIME: ŠIME MATANOVIĆ BROJ INDEKSA: 57655

1)

$$\begin{vmatrix} 1 & 2 & 0 & 0 & 0 \\ 2 & 1 & 2 & 0 & 0 \\ 0 & 2 & 1 & 2 & 0 \\ 0 & 0 & 2 & 1 & 2 \\ 0 & 0 & 0 & 2 & 1 \end{vmatrix} = 1 \begin{vmatrix} 1 & 2 & 0 & 0 \\ 2 & 1 & 2 & 0 \\ 0 & 2 & 1 & 2 \\ 0 & 0 & 2 & 1 \end{vmatrix} - 2 \begin{vmatrix} 2 & 2 & 0 & 0 \\ 0 & 1 & 2 & 0 \\ 0 & 2 & 1 & 2 \\ 0 & 0 & 0 & 1 \end{vmatrix} =$$

$$1\left(1 \underbrace{\begin{vmatrix} 1 & 2 & 0 \\ 2 & 1 & 2 \\ 0 & 2 & 1 \end{vmatrix}}_{-7} - 2 \underbrace{\begin{vmatrix} 2 & 2 & 0 \\ 0 & 1 & 2 \\ 0 & 2 & 1 \end{vmatrix}}_{-6}\right) - 2\left(1 \underbrace{\begin{vmatrix} 2 & 2 & 0 \\ 0 & 1 & 2 \\ 0 & 2 & 1 \end{vmatrix}}_{-6}\right)$$



$= 1 - 4 - 4 = 1 - 8 = -8 + 1 = -7$

$= 2 - 8 = -8 + 2 = -6$

$= 2 - 8 = -8 + 2 = -6$

$1(-7+12) - 2(-6) = \cancel{12} - 7 + \cancel{12} = \boxed{-7}$ ✗ ŠTETA!

VIDI CVAR MANDARIĆ

IME I PREZIME: ŠIME MATANOVIĆ BROJ INDEKSA: 57655

2.) H.A.

$$\lim_{x\to\infty} x-\sqrt{x^2+x+1}\cdot\frac{x+\sqrt{x^2+x+1}}{x+\sqrt{x^2+x+1}} = \lim_{x\to\infty}\frac{x^2-x^2-x-1}{x+\sqrt{x^2+x+1}} =$$

$$= \lim_{x\to\infty}\frac{-x-1}{x+\sqrt{x^2+x+1}} = \lim_{x\to\infty}\frac{-\frac{x}{x}-\frac{1}{x}}{\frac{x}{x}+\sqrt{\frac{x^2}{x^2}+\frac{x}{x^2}+\frac{1}{x^2}}} = \frac{-1}{1+1} = -\frac{1}{2}$$ ×

L.H. A. $y=-\frac{1}{2}$

$$\lim_{x\to\infty}\frac{x-\sqrt{x^2+x+1}}{x} = \lim_{x\to\infty}\frac{\frac{x}{x}-\sqrt{\frac{x^2}{x^2}+\frac{x}{x^2}+\frac{1}{x^2}}}{\frac{x}{x}} \qquad \frac{0}{1}=-\infty$$

ne postoji kosa asimptota

V.A.

$$\lim_{x\to+\infty} x-\sqrt{x^2+x+1} = \left|\begin{matrix}x\to-x\\ \infty\to\infty\end{matrix}\right| = \lim_{x\to\infty} -x-\sqrt{x^2-x+1}\cdot\frac{-x+\sqrt{x^2-x+1}}{x+\sqrt{x^2-x+1}} =$$

$$= \lim_{x\to\infty}\frac{x^2-x^2+x-1}{-x+\sqrt{x^2-x+1}} = \lim_{x\to\infty}\frac{x-1}{-x+\sqrt{x^2-x+1}} = \lim_{x\to\infty}\frac{\frac{x}{x}-1}{-\frac{x}{x}+\sqrt{\frac{x^2}{x^2}-\frac{x}{x^2}+\frac{1}{x^2}}} =$$

$$= \frac{1}{-1+1} = \frac{1}{0} = +\infty$$ nema vertikalne asimptote jer

$D(f) = \langle -\infty, 1] \cup [1, +\infty)$ ×

4.) $\ln(\cos(2x)) = \frac{1}{\cos 2x}\cdot(\cos 2x)'\cdot(2x)'$ × $= \frac{-2\sin x\cdot 2}{-\sin 2x}$ × $= \frac{-4\sin x}{2\sin x}$

$= \frac{-2\sin x}{\sin x}$

$f(x) =$

BOLJE NAUČITI DERIVIRATI KOMPOZICIJU FUNKCIJE.

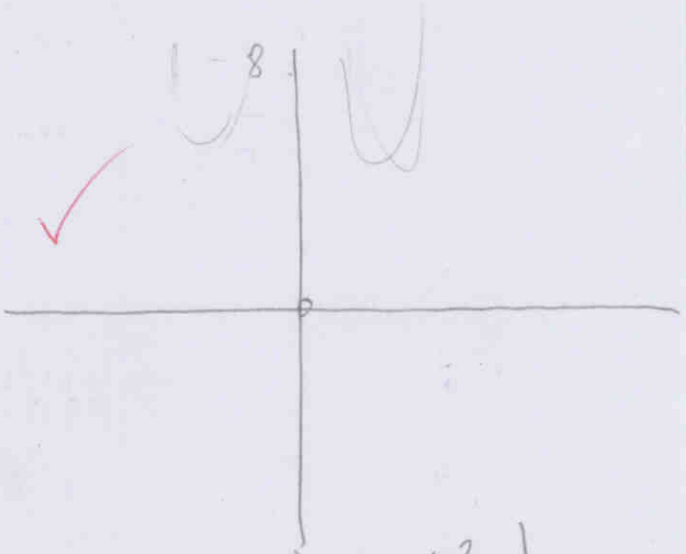
IME I PREZIME: ŠIME MATANOVIĆ BROJ INDEKSA: 57655

5)

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

HORIZONTALNA ASIMPTOTA

$$\lim_{x\to\infty} \frac{x^2+1}{x^2+2} = \lim_{x\to\infty} \frac{\frac{x^2}{x^2}+\frac{1}{x^2}}{\frac{x^2}{x^2}+\frac{2}{x^2}} = \frac{1+0}{1+0} = 1$$ ✓



$$\lim_{x\to}$$

$$h'(x) = \left(\frac{x^2+1}{x^2+2}\right)' = \frac{(x^2+1)'(x^2+2) - (x^2+2)'(x^2+1)}{(x^2+2)^2} = \frac{2x(x^2+2) - 2x(x^2+1)}{(x^2+2)^2} =$$

$$= \frac{2x+4x-2x^3-2x}{(x^2+2)^2} = \frac{2x}{(x^2+2)^2}$$ ✓

Funkcija nije parna niti neparna jer ne sadrži trigonometrijske funkcije ✗

$$h''(x) = \left(\frac{2x}{(x^2+2)^2}\right)' = (2x)'\cdot((x^2+2)^2)^{-1}\cdot(x^2+2)' = 2\cdot -2(x^2+2)^{-3}\cdot 2x = -8x(x^2+2)^{-3}$$

TREBA BOLJE NAUČITI ~~GDJE~~ ISPITATI DOMENU I ASIMPTOTE FUNKCIJE

ZA MATRICE JOŠ VJEŽBE...