(Hf) (a) arcsin $\left(-\frac{\sqrt{3}}{2}\right) = ?$ arc sin x = y (=7 sin y = x $\left(x \in [-1,1]\right)$ $\left(y \in \left[-\frac{\pi}{2}, \frac{\pi}{2}\right]\right)$ Exist $\arcsin\left(-\frac{\sqrt{3}}{2}\right) = y \in \left[-\frac{\pi}{2}, \frac{\pi}{2}\right] = y \in \left[-\frac{\pi}{2}, \frac{\pi}{2}\right] = y = -\frac{\pi}{3}$ I'm arcsin $\left(-\frac{\sqrt{3}}{2}\right) = -\frac{11}{3}$. 6) $\operatorname{arsh}(\frac{3}{n}) = 2$ ($\operatorname{arsh}_{X} = \operatorname{ln}(X + \sqrt{x^{2}+1})$ ($X \in \mathbb{R}$) $\operatorname{arsh}\left(\frac{3}{5}\right) = \ln\left(\frac{3}{5} + \sqrt{\frac{3}{16}}\right) = \ln\left(\frac{3}{5} + \sqrt{\frac{25}{16}}\right) =$ 2 lm (3+5) = lm2 c) $e^{-2 \ln 3} = ?$ $e^{-2\ln 3} = e^{\ln(3^{-2})} = 3^{-2} = \frac{1}{9}$ vays ex=y (y>0) (=> x = lny (xER) $y = e^{-2\ln 3} = \ln y = -2 \ln 3 = \ln y = -2$ (=) $\log_3 y = -2$ (=) $y = 3^2 = \frac{1}{9}$

executo objected. The to the first translation cut and all and expense of the companion of Action and

(Hf) 2. Teljes Ligrenynitsgálat
a)
$$f(x) = \left(\frac{x+2}{x-3}\right)^2$$
 $(x \neq 3)$

1. Kesdeti vizsgaladok. fracionalis tort Byring =) f ED.

$$f > 0$$
 is $f(x) = 0$ (=) $x = -2$.

f nem paros, paretlem vary periolilis.

2. Monodonidas.

$$\frac{\text{Monodonidas}}{f'(x) = 2 \cdot \left(\frac{x+2}{x-3}\right)^{1} \cdot \frac{1 \cdot (x-3) - (x+2) \cdot 1}{(x-3)^{2}} = -\frac{10(x+2)}{(x-3)^{3}} = 0 \iff x = -2.$$

		,				
1	x2-2	1-2	-24×63	x > 3		
f	-	0	+			
lok		win.				

 $f''(x) = -10 \cdot \frac{1 \cdot (x-3)^3 - (x+2) \cdot 3(x-3)^2}{(x-3)^6} = -10 \cdot \frac{(x-3) - (x+2) \cdot 3}{(x-3)^4} = 10 \cdot \frac{2x+9}{(x-3)^4}$

f"(x)=0 (=) x=-9/2.

$$x = -1/2$$
.

 $x = -1/2$.

 $x =$

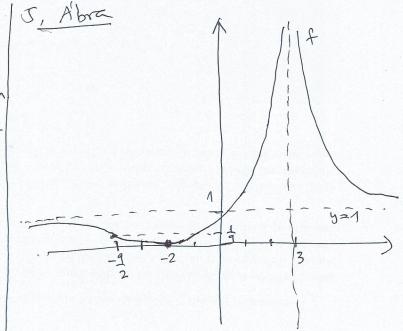
4. Halareilèlel es assimplotel.

line
$$\left(\frac{x+2}{x-3}\right)^2 = \lim_{x\to \pm \infty} \left(\frac{1+\frac{2}{x}}{1-\frac{2}{x}}\right)^2 = \left(\frac{1+\frac{2}{x}}{1-\frac{2}{x}$$

eseit y=1 assimple a (100)-ben es (-00)-ben

eseit
$$y=1$$
 absumpted a $(x+2)^2$ lin $(x+2)^2$ lin $(x-1)^2$ $(x-3)^2 = \lim_{x\to 3\pm 0} (x+3)^2 = \lim_{x\to 3\pm 0} (x$

$$= 5^2. (+\infty) = +\infty.$$



1. Kerdeti virsgålabe. A dentaleri pabiljal mist fED (R) f(x)=0 (=) x=0, f(x) >0.

f neur paros, paratlan vagy perio Likus.

2. Monosonstas.

 $f'(x) = 2x \cdot e^{x} + x^{2} \cdot e^{x} = e^{x}(x^{2}+2x) = e^{x} \cdot x(x+2) = 0$ (=> x=0 v. x=-2

	X<-2	1-2	-24xco	0	X20
£1	+	0	_	0	+
f	1	40-2	7	0	1
LOK		max		min	

3. Konvexidas

 $f''(x) = e^{x}(x^{2}+1x) + e^{x}(2x+2) = e^{x}(x^{2}+4x+2) = 0 \iff x^{2}+4x+2 = 0$

	XC-2-52	-2-12	-2-82CXC-2+62	-2352	X7-2+1/2
£"1	+	0	-	0	+
4		0,19	\wedge	0,38	\cup
-		inst !		Infl.	

4. Hatereitikek, assimplotak

 $\lim_{\chi \to +\infty} \chi^2 \cdot e^{\chi} = (+\infty)^2 (+\infty) = +\infty.$

lin x.ex = lin (-x).ex = x-7+00

= $\lim_{x\to +\infty} \frac{x^2}{e^x} = \left(\frac{+\infty}{+\infty}\right)^{\frac{1}{2}} = \lim_{x\to +\infty} \frac{2x}{e^x} =$

= lim = 0,

18y y=0 assinglate a (-vo)-bens.

lui f(x) = lin xex 2 +00 x7+00 x = x700

wines assimpleda a (+ 10)-ben.

