Question

Graph of the function $f(x)=\frac{x+1}{x^2-1}$:

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

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

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

- domain: $x\in(-\infty,1)\cup(1,\infty)$.
- Asymptotes:

Vertical: $x=1$.

Horizontal: $y=0$.

- There is no any point of inflection, maximum-minimum points.
- Function increasing on the interval: $x\in\varnothing$. Function decreasing on the interval: $x\in(-\infty,1)\cup(1,\infty)$.
- Function concave up: $x\in(-\infty,1)$. Function concave down: $x\in(1,\infty)$.