$$f(x)=\frac{5-2x}{(3x+2)^2}$$ DOM: $3x+2\neq 0$ $x\neq -\frac{2}{3}$

$x=-\frac{2}{3}$ A.V

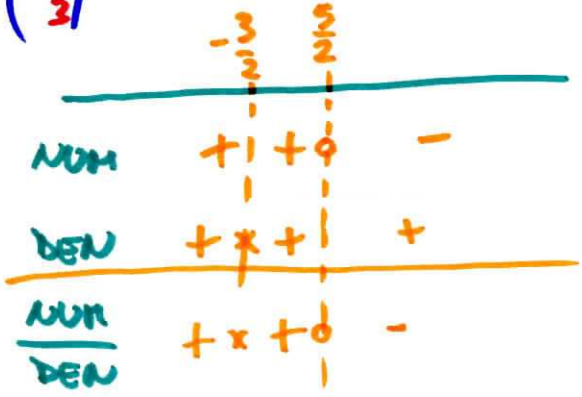
$\lim_{x\to -\frac{2}{3}} \frac{5-2x}{(3x+2)^2}=0^+$ A.O $y=0$

$\lim_{x\to(-\frac{2}{3})^+} f(x)=\frac{5-2(-\frac{2}{3})}{0^+}=\frac{5+\frac{4}{3}}{0^+}=+\infty$

SEGNO DI $f(x)$

NUM: $5-2x\geq 0$ $\frac{5}{2}\geq x$

DEN: $\geq 0\ \forall x\in$ DOM

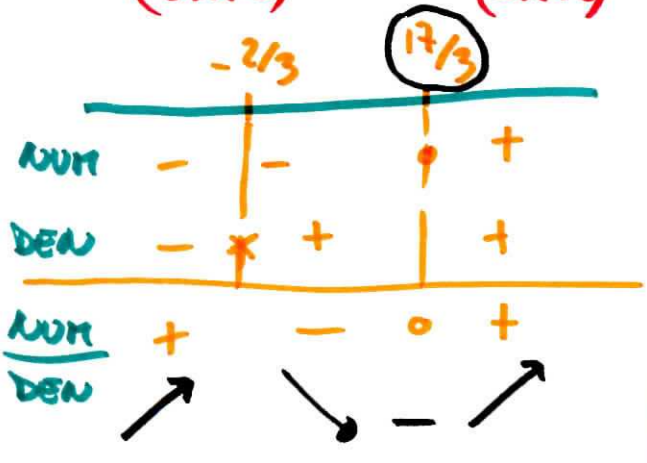


$$f'(x)=\frac{-2(3x+2)^2-(5-2x)2(3x+2)\cdot 3}{(3x+2)^{\cancel{4}3}}=\frac{-6x-4-30+12x}{(3x+2)^3}=\frac{6x-34}{(3x+2)^3}$$

SEGNO DI $f'(x)$

NUM $6x-34\geq 0$ $x\geq \frac{34}{6}^{17}_{3}$

DEN $3x+2\geq 0$ $x\geq -\frac{2}{3}$



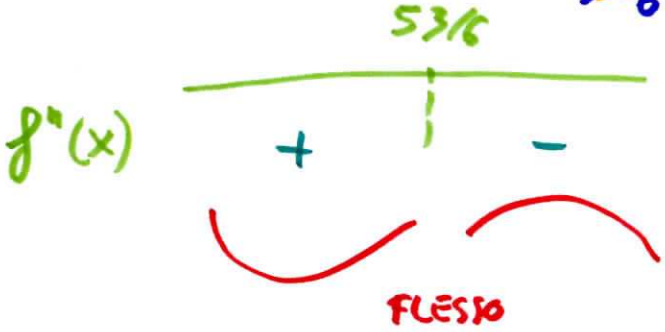
$f(x)=f(\frac{17}{3})=-\frac{1}{57}$

$$f'(x)=\frac{6x-34}{(3x+2)^3}$$

$$f''(x)=\frac{6\cdot(3x+2)^3-(6x-34)\cdot 3(3x+2)^2\cdot 3}{(3x+2)^4}=\frac{18x+12-54x+306}{(3x+2)^4}$$

$$f''(x)=\frac{318-36x}{(3x+2)^4}$$

NUM: $318-36x\geq 0$ $\quad 318\geq 36x$ $\quad \frac{318}{36}\geq x$ $\quad \frac{53}{6}\geq x$



$f''\left(\frac{53}{6}\right)=0$

$f'\left(\frac{53}{6}\right)=\dots$

$$f(x)|_{x=0}=\frac{5-0}{(0+2)^2}=\frac{5}{4}$$

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