

RIEŠENIE - MINUTEST 3 - LS 2023/24 - JAROŠ - MATEMATIKA A

9:00: $f(x) = \frac{3x+1}{x+2}$, $D_f = ?$, $P_x, P_y, S = [?, ?]$, $x_0 = ?$, $y_0 = ?$, GRAF
FCIE
+ UYRNAC
VŠETKO

11:00: $f(x) = \frac{x+3}{4-2x}$, $D_f = ?$, $P_x = [?, ?]$, $P_y = [?, ?]$, $S = [?, ?]$, $x_0 = ?$, $y_0 = ?$, GRAF
FCIE
+ UYRNAC
VŠETKO

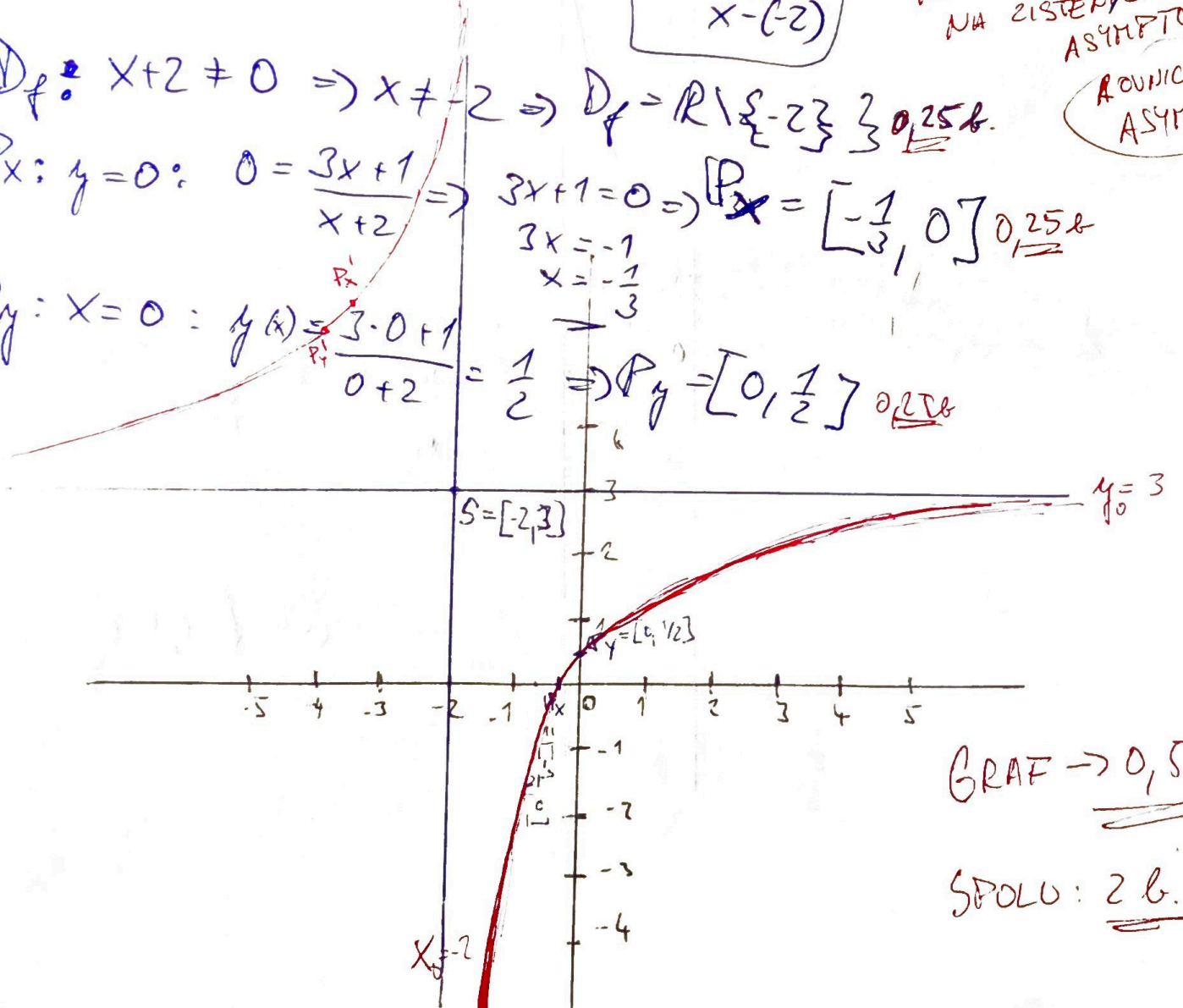
9:00: $f(x) = \frac{3x+1}{x+2} \stackrel{\text{UPRAVNE}}{=} \frac{3x+1+5-5}{x+2} = \frac{(3x+6)-5}{x+2} = \frac{3 \cdot (x+2) - 5}{x+2} =$
 $= \frac{3 \cdot (x+2)}{x+2} - \frac{5}{x+2} = 3 - \frac{5}{x+2} \Rightarrow S = [-2, 3]$ 0,25 b

(ALTERNATÍVNE: $3 \cdot x + 1 : (x+2) = 3 - \frac{5}{x+2}$ $\rightarrow y_0 = 3$
 $\frac{3x+1 - (3x+6)}{0-5} = \frac{-5}{-5} = 1$ $x_0 = -2$
 $3 - \frac{5}{x - (-2)}$ POSTUP ÚPRAV NA ZISTENIE ASYMPTOT 0,25 b
 AROVNICE ASYMPTOT = 0

$D_f: x+2 \neq 0 \Rightarrow x \neq -2 \Rightarrow D_f = \mathbb{R} \setminus \{-2\}$ 0,25 b.

$P_x: y=0: 0 = \frac{3x+1}{x+2} \Rightarrow 3x+1=0 \Rightarrow P_x = [-\frac{1}{3}, 0]$ 0,25 b
 $3x = -1$
 $x = -\frac{1}{3}$

$P_y: x=0: y(x) = \frac{3 \cdot 0 + 1}{0 + 2} = \frac{1}{2} \Rightarrow P_y = [0, \frac{1}{2}]$ 0,25 b



GRAF \rightarrow 0,5 b.

SPOLU: 2 b.

11:00: $f(x) = \frac{x+3}{4-2x}$

↳ VYDELME: $(x+3) : (4-2x) = -\frac{1}{2} + \frac{5}{4-2x} = -\frac{1}{2} - \frac{5}{2x-4} =$

$$\frac{0+5}{-(-2+x)} \text{ POSTUP } \rightarrow 0,25 \text{ l}$$

$$= -\frac{1}{2} - \frac{5}{2 \cdot (x-2)}$$

↳ $y_0 = -\frac{1}{2}$
 $x_0 = 2$ $\Rightarrow \mathcal{D} = [2, -\frac{1}{2}]$ 0,25 l

$\mathcal{D}_f = 4-2x \neq 0$ 0,25

$P_x: y=0: 0 = \frac{x+3}{4-2x} \Rightarrow 0 = x+3 \Rightarrow x = -3 \Rightarrow P_x = [-3, 0]$ 0,25

$P_y: x=0: y(0) = \frac{0+3}{4-2 \cdot 0} = \frac{3}{4} \Rightarrow P_y = [0, \frac{3}{4}]$ 0,25

