M-2-FCIE | ELF/NVAPN SAH, LKF |

(A)

(1) $f_1: y = \frac{x-1}{x-3} = (x-1):(x-3) = 1 + \frac{2}{x-3}$ ✓

$\ominus x \underset{\oplus}{-3}$

$\overline{\quad 2 \quad}$ ⟶ 3 ↑1

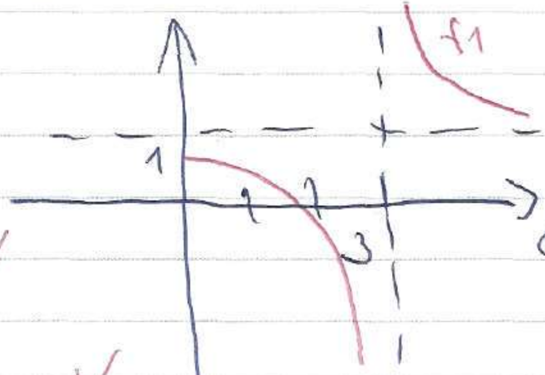
$D(f) = R - \{3\}$ ✓

$H(f) = R - \{1\}$ ✓

as: $x = 3$ ✓

$y = 1$ ✓

$f_1': y = \frac{1}{x}$



GRAF ✓✓

$o_x: y = 0 \quad 0 = \frac{x-1}{x-3}$ ✓

$0 = x - 1$

$x = 1 \quad f_1 \cap o_x = \{[1,0]\}$ ✓

$o_y: x = 0 \quad y = \frac{-1}{-3} = \frac{1}{3}$ ✓

$f_1 \cap o_y = \{[0, \frac{1}{3}]\}$ ✓

1b

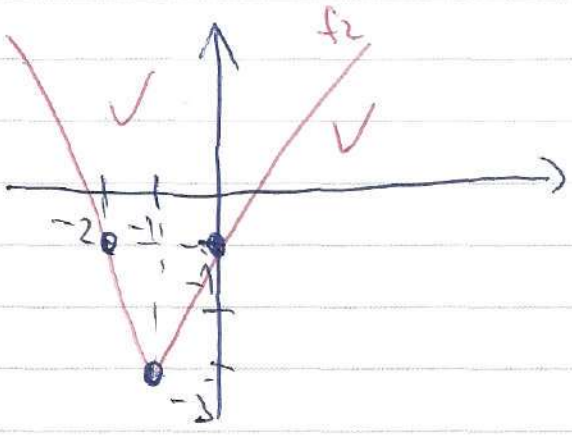
(2) $f_2: y = 2|x+1| - 3$

NB: $x = -1$ ✗

	$(-\infty, -1)$	$\langle -1, \infty)$
$\lvert x+1 \rvert$	$-x-1$ ✓	$x+1$ ✓
	I_1	I_2

$I_1: y = 2(-x-1) - 3 = -2x - 5 \quad [-2, -1]$ ✓

$I_2: y = 2(x+1) - 3 = 2x - 1 \quad [-1, -3] \quad [0, -1]$ ✓



1b

RAST: $\langle -1, \infty)$ ✓

KLESÁ $(-\infty, -1)$ ✓

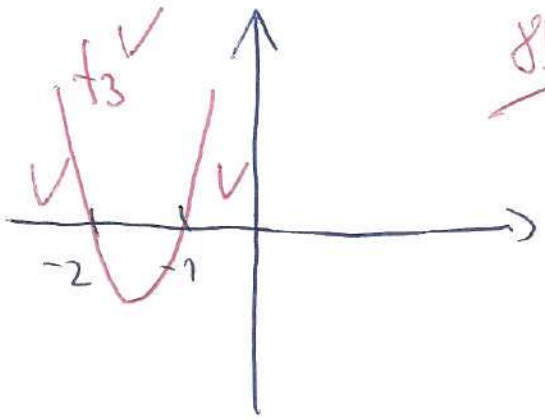
③ $f_3: y = |x^2 + 3x + 2|$

NB: $x^2 + 3x + 2 \geq 0$

$(x+2)(x+1) > 0$

$x_1 = -1$

$x_2 = -2$



8b

30 – 27 (1)

26,5 – 22,5 (2)

24,0 – 13,5 (3)

13,0 – 10,5 (4)