

108/ úkol 1.

$$a) \frac{2m}{5} + \frac{3m}{2} = \frac{2 \cdot 2m + 5 \cdot 3m}{10} = \frac{4m + 15m}{10} = \frac{19m}{10}$$

(podmínky
základní,
ve jmenovateli
jsou ústle)

$$b) \frac{4}{8x^2} - \frac{2}{3x} = \frac{3 \cdot 4 - 8x \cdot 2}{8 \cdot 3 \cdot x \cdot x} = \frac{12 - 16x}{24x^2} = \frac{4(3 - 4x)}{24x^2} = \frac{3 - 4x}{6x^2}$$

$$x \neq 0$$

$$c) \frac{5x+3}{x+1} + \frac{2x-1}{2x} = \frac{2x \cdot (5x+3) + (2x-1) \cdot (x+1)}{(x+1) \cdot 2x} = \frac{10x^2 + 6x + 2x^2 + 2x - x - 1}{(x+1) \cdot 2x} = \frac{12x^2 + 7x - 1}{2x^2 + 2x}$$

$$x \neq 0 \\ x \neq -1$$

$$d) \frac{m+n}{3m-2n} - \frac{m-n}{2n-3m} = \frac{(-1)(m+n) - (m-n)}{(3m-2n) \cdot (-1)} =$$

$$\frac{-1 \cdot (-2n+3m)}{\text{to stejne'}}$$

$$= \frac{-m-n - m+n}{-3m+2n} = \frac{-2m}{-(3m-2n)} = \frac{2m}{3m-2n}$$

$$3m-2n \neq 0$$

$$3m \neq 2n$$

$$m \neq \frac{2}{3}n$$

$$e) \frac{3a}{a+1} + \frac{4}{a-1} - 3 = \frac{3a \cdot (a-1) + 4 \cdot (a+1) - 3 \cdot (a+1)(a-1)}{(a+1) \cdot (a-1)}$$

↑
vzorec

$$= \frac{3a^2 - 3a + 4a + 4 - 3 \cdot (a^2 - 1)}{(a+1) \cdot (a-1)} =$$

$$= \frac{3a^2 - 3a + 4a + 4 - 3a^2 + 3}{(a+1) \cdot (a-1)} = \frac{a+7}{a^2-1}$$

$$a \neq \pm 1$$

v-sadech chyb' jedne z podmínek

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

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

TOTO JE "VYŠŠÍ LEVEL". KROUKNI:

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

$$= \frac{\underbrace{x-1} - \underbrace{x-1} + \underbrace{x-1}}{(x+1)^2 \cdot (x-1)} = \frac{x-3}{(x+1)^2 \cdot (x-1)}$$

$$\textcircled{x \neq \pm 1}$$