

Datum: *do 20. 11.*

Jméno:

1) Vypočítej: **POZOR NA ZNAMENKA!**

$$(2a + 8) - (7a - 3) = 2a + 8 - 7a + 3 = \underline{\underline{-5a + 11}}$$

$$(5x + 7) - (x + 3) = 5x + 7 - x - 3 = \underline{\underline{4x + 4}}$$

$$(7a - 3b) + (4a + 3b) = 7a - 3b + 4a + 3b = \underline{\underline{11a}}$$

$$(7x - 2y) + (x - 5y) = \underline{\underline{8x - 7y}}$$

$$(5a^2 - 3a - 9) - (6a - 13) = 5a^2 - 3a - 9 - 6a + 13 = \underline{\underline{5a^2 - 9a + 4}}$$

$$(8x^2 - 3x - 9) + (10x - 24) = 8x^2 - 3x - 9 + 10x - 24 = \underline{\underline{8x^2 + 7x - 33}}$$

$$-(4a + 3ab - b) + (a + b) = 4a - 3ab - b + a + b = \underline{\underline{5a - 3ab + 2b}}$$

$$-(5x + 6xy - y) + (4x + y) = 5x - 6xy + y + 4x + y = \underline{\underline{9x - 6xy + 2y}}$$

$$(4a + 10b - 5) - (2a + 7b) = 4a + 10b - 5 - 2a - 7b = \underline{\underline{2a + 3b - 5}}$$

$$(5x + 4y - 8) - (-2x + 7y) = 5x + 4y - 8 + 2x - 7y = \underline{\underline{7x - 3y - 8}}$$

2) Vypočítej, výsledky uveď v základním tvaru a nezapomeň určit podmínky:

$$\frac{7}{2x} + \frac{3}{2x} = \frac{7+3}{2x} = \frac{10}{2x} = \frac{5}{x} \quad \boxed{x \neq 0}$$

! Podmínky určujeme pro celý příklad a vždy se jmenovatele!

$$\frac{x+1}{y^2} + \frac{6x}{y^2} = \frac{x+1+6x}{y^2} = \frac{7x+1}{y^2} \quad \boxed{y \neq 0}$$

$$\frac{18z^2}{xy} + \frac{2z^2}{3xy} = \frac{3 \cdot 18z^2 + 2z^2}{3xy} = \frac{54z^2 + 2z^2}{3xy} = \frac{56z^2}{3xy} \quad \begin{matrix} \boxed{x \neq 0} \\ \boxed{y \neq 0} \end{matrix}$$

$$\frac{3}{x+y} + \frac{2}{x-y} = \frac{3 \cdot (x-y) + 2 \cdot (x+y)}{(x+y) \cdot (x-y)} = \frac{3x - 3y + 2x + 2y}{(x+y) \cdot (x-y)} = \frac{5x - y}{x^2 - y^2} \quad \begin{matrix} \boxed{x \neq y} \\ \boxed{x \neq -y} \end{matrix}$$

$$\frac{7x}{2} - \frac{x}{2} = \frac{7x - x}{2} = \frac{6x}{2} = \frac{3x}{1} = \underline{\underline{3x}} \quad \text{bez podmínek}$$

$$\frac{x-2}{y} - \frac{2}{y} = \frac{(x-2) - 2}{y} = \frac{x-4}{y} \quad \boxed{y \neq 0}$$

$$\frac{x+3}{5x} - \frac{3x+1}{5x} = \frac{(x+3) - (3x+1)}{5x} = \frac{x+3-3x-1}{5x} = \frac{-2x+2}{5x} \quad \boxed{x \neq 0}$$

$$\frac{2y}{x+y} - \frac{4y}{x+y} - \frac{y}{x+y} = \frac{2y-4y-y}{x+y} = \frac{-3y}{x+y} \quad \boxed{y \neq -x}$$

$$\frac{5}{6x} - \frac{y}{2x} = \frac{5}{6x} - \frac{3y}{6x} = \frac{5-3y}{6x} \quad \boxed{x \neq 0}$$

$$\frac{x}{5} - \frac{2x}{3} = \frac{3x}{15} - \frac{10x}{15} = \frac{-7x}{15} \quad \text{bez podmínek}$$

$$\frac{x+2}{x-2} - \frac{x-2}{x+2} = \frac{(x+2) \cdot (x+2) - (x-2) \cdot (x-2)}{(x-2) \cdot (x+2)} = \frac{(x^2+4x+4) - (x^2-4x+4)}{(x-2) \cdot (x+2)} =$$

$$\frac{x-1}{2x} - \frac{1}{x} - \frac{y}{4x} = \frac{2x-2-4-y}{4x} = \frac{2x-y-6}{4x} \quad \boxed{x \neq 0}$$

$$= \frac{x^2+4x+4 - x^2+4x-4}{x^2-4} = \frac{8x}{x^2-4} \quad \boxed{x \neq 2} \quad \boxed{x \neq -2}$$

UVĚDOM SI:  $(x+2) \cdot (x+2) = (x+2)^2$   
 $(A+B)^2 = A^2 + 2 \cdot A \cdot B + B^2$   
 $(x-2) \cdot (x-2) = (x-2)^2$   
 $(A-B)^2 = A^2 - 2AB + B^2$   
 $(x-2) \cdot (x+2) = x^2 - 4$   
 $(A-B) \cdot (A+B) = A^2 - B^2$