

DÚ

Jméno, třída *Šárka Křiváková*

Vypočítej a uveď, kdy má daný výraz smysl:

$$1. \frac{x}{6+2x} - \frac{5x}{x^2+3x} = \frac{x^2-10x}{2x(3+x)} = \frac{x(x-10)}{2x(3+x)} = \frac{x-10}{2(3+x)} \quad \begin{matrix} x \neq 0 \\ x \neq -3 \end{matrix}$$

$$2. \frac{y}{x^2+x} + \frac{x}{xy-y} = \frac{y^2(x-1) + x^2(x+1)}{xy(x+1)(x-1)} = \frac{xy^2 - y^2 + x^3 + x^2}{xy(x+1)(x-1)} \quad \begin{matrix} y \neq 0 \\ x \neq 0 \\ x \neq 1 \\ x \neq -1 \end{matrix}$$

$$3. \frac{3x}{x-x^2} - \frac{x}{x^2-1} = \frac{3x^2+3x+x^2}{x(x+1)(1-x)} = \frac{4x^2+3x}{x(x+1)(1-x)} = \frac{x(4x+3)}{x(x+1)(x-1)} = \frac{4x+3}{(x+1)(x-1)} \quad \begin{matrix} x \neq 0 \\ x \neq 1 \\ x \neq -1 \end{matrix}$$

$$4. \frac{3x}{x^2-1} - \frac{x}{(1-x)^2} = \frac{-3x(1-x) - x^2}{(x+1)(1-x)^2} = \frac{-3x(1-x) - x^2}{(x+1)(1-x)^2} = \frac{-4x+2x^2}{(x+1)(1-x)^2} \quad \begin{matrix} x \neq 1 \\ x \neq -1 \end{matrix}$$

$$5. \frac{x}{x+1} + \frac{1}{1-x} - \frac{1}{x^2-1} = \frac{x^2-x-1(x+1)-1}{(x+1)(x-1)} = \frac{x^2-2x-2}{(x+1)(x-1)} \quad \begin{matrix} x \neq 1 \\ x \neq -1 \end{matrix}$$

$$6. \frac{6x^2}{5y} \cdot \frac{-15y^2}{2x^2} = -\frac{9y^2}{x^2} \quad \begin{matrix} x \neq 0 \\ y \neq 0 \end{matrix}$$

$$7. \frac{2y^2-50}{5y+y^2} \cdot \frac{3y^2}{12y-60} = \frac{2(y-5)(y+5)}{y(y+5)} \cdot \frac{3y^2}{2(y-5)} = \frac{y}{2} \quad \begin{matrix} y \neq -5 \\ y \neq 5 \\ y \neq 0 \end{matrix}$$

Podpis rodiče