Úpravy výrazů

Zjednodušte výraz a určete, pro která x má smysl:

1)
$$\left(\frac{2}{x^2+3x}-\frac{2}{x^2-9}-\frac{1}{3x-x^2}\right)\cdot\frac{x^2+2x-3}{1-2x+x^2}$$

2)
$$\left(1+\frac{1}{x^2}\right)\cdot\left(1-2x+x^2\right):\frac{1-x^4}{x^2}$$

3)
$$\left(\frac{1}{1-x}+1+\frac{2}{x^2-1}\right):\left(x-1-\frac{2x^2-1}{x+1}\right)$$

4)
$$\left(\frac{x+1}{x+2}-\frac{1-x}{2-x}\right):\frac{2x}{x^2-4}$$

5)
$$\frac{x+1}{x-1}:\frac{x^2-1}{2x^2-4x+2}$$

6)
$$\left(\frac{x-2}{x}+\frac{x}{x-2}\right):\frac{x^2-1}{x^2-4}$$

7)
$$\left[\frac{1}{(x-2)^2}-\frac{2}{x^2-4}+\frac{1}{x^2+4x+4}\right]:\frac{4}{x^2-4}$$

8)
$$\frac{72}{4x^2-36}:\left(\frac{2x}{x+3}-\frac{2x}{x-3}\right)$$

9)
$$\left(\frac{1}{x-\frac{1}{2}}-\frac{1}{x+\frac{1}{2}}\right):\frac{2x}{4x^2-4x+1}$$

10)
$$\left(x+2+\frac{x^2}{2}\right):\frac{x}{1-\frac{x}{x-2}}$$