

### 85. 3-13 Множење и делење на алгебарски дробки

Помножи ги дробките:

$$1a) \frac{3xy}{4ab} \cdot \frac{10a^2y}{9x^2y} = \frac{\cancel{3} \cancel{xy}}{\cancel{4} \cancel{ab}} \cdot \frac{\overset{5/}{\cancel{10} a^2 y}}{\underset{3}{\cancel{9} x^2 y}} = \frac{5ay}{6bx} \quad 1б) \frac{x^5}{y^2} \cdot \frac{y}{x^3} = \frac{x^2}{y} \quad 1в) \frac{3}{a^2x} \cdot \frac{5}{6ax^3} = \frac{5}{2a^3x^4}$$

$$2a) \frac{a}{x+y} \cdot \frac{b}{x-y} = \frac{ab}{x^2-y^2} \quad 2б) \frac{a^2-b^2}{a^2+b^2} \cdot \frac{2a}{a-b} = \frac{2a(a+b)}{a^2+b^2} \quad 2в) \frac{x+1}{y} \cdot \frac{4y^2}{x^2-1} = \frac{4y}{x-1}$$

$$3a) \frac{x-2}{6x+2y-2z} \cdot \frac{3x+y-z}{2x-x^2} = \frac{x-2}{2(3x+y-z)} \cdot \frac{3x+y-z}{-x(x-2)} = \frac{1}{-2x} = \frac{-1}{2x}$$

$$3б) \frac{1+4x+4x^2}{2a^2+8} \cdot \frac{4a+a^3}{4x^2-1} = \frac{4x^2+4x+1}{2(a^2+4)} \cdot \frac{a^3+4a}{(2x-1)(2x+1)} = \\ = \frac{(2x+1)^2}{2(a^2+4)} \cdot \frac{a(a^2+4)}{(2x-1)(2x+1)} = \frac{a(2x+1)}{2(2x-1)}$$

Подели ги дробките во задачите 4 и 5

$$4a) \frac{3a^2c}{xy} : \frac{4a^3c^2}{x^3y^2} = \frac{3a^2c}{xy} \cdot \frac{x^3y^2}{4a^3c^2} = \frac{3x^2y}{4ac}$$

$$4б) \frac{5a^3}{8b^3c} : \frac{15b^2}{4ac^2} = \frac{5a^3}{8b^3c} \cdot \frac{4ac^2}{15b^2} = \frac{5 \cdot 4 \cdot a^4c^2}{8 \cdot 15 \cdot b^5c} = \frac{a^4c}{2 \cdot 3b^5} = \frac{a^4c}{6b^5}$$

$$4c) \frac{x-1}{2y} : \frac{(1-x)^2}{4y^2} = \frac{x-1}{2y} \cdot \frac{4y^2}{(1-x)^2} = \\ = \frac{x-1}{2y} \cdot \frac{4y^2}{(-1)^2(x-1)^2} = \frac{x-1}{2y} \cdot \frac{4y^2}{(x-1)^2} = \frac{2y}{x-1}$$

$$5a) \frac{x^3}{(a-2)^3} : \frac{x^2}{(2-a)^2} = \frac{x^3}{(a-2)^3} \cdot \frac{(2-a)^2}{x^2} = \frac{x^3}{(a-2)^3} \cdot \frac{(-1)^2(a-2)^2}{x^2} = \frac{x}{a-2}$$

$$5б) \frac{x^2-xy}{a^2+a} : \frac{2x-2y}{3a+3} = \frac{x^2-xy}{a^2+a} \cdot \frac{3a+3}{2x-2y} = \frac{x(x-y)}{a(a+1)} \cdot \frac{3(a+1)}{2(x-y)} = \frac{3x}{2a}$$