

АЛГЕБАРСКИ РАЗЛОМЦИ

1.

$$\left(\frac{16x - x^2}{x^2 - 4} + \frac{3 + 2x}{2 - x} - \frac{2 - 3x}{x + 2} \right) : \frac{4 - x^2}{3x}$$

2.

$$\frac{x^2 - x - 6}{x^2 - 4} - \frac{x - 1}{2 - x} - 2$$

3.

$$\left(\frac{12x}{x + 3} \right) - (x + 3) : \left(\frac{x}{x + 3} - \frac{3}{3 - x} - \frac{6x}{x^2 - 9} \right)$$

4.

$$\left(1 + \frac{8x^3}{1 - 8x^3} + \frac{1}{2x - 1} \right) \cdot \left(\frac{1 + 2x}{2x} - \frac{1}{1 + 2x} \right)$$

5.

$$\frac{10a - 18}{12a^2 - 27} - \frac{1}{2a + 3} + \frac{4}{18a - 27} - \frac{5}{9a}$$

6.

$$\frac{2}{a + 4} - \frac{a - 3}{a^2 - 8a + 16} + \frac{a - 9}{16 - a^2}$$

7.

$$\frac{8x^2 + 18y^2}{9y^2 - 4x^2} - \frac{3y + 2x}{3y - 2x} - \frac{2x - 3y}{2x + 3y}$$

8.

$$\frac{x + 1}{ax + 6 - 2x - 3a} - \frac{2 + a}{a^2 - 4}$$

9.

$$\frac{2m}{m^2 - 6m + 9} - \frac{2m}{m^2 - 9} + \frac{1}{m + 3}$$

10.

$$\frac{1}{x - 1} + \frac{2x + 1}{x^2 - 1} - \frac{3x^2 + 5x - 1}{1 - x^3}$$

11.

$$\frac{4a^2}{8a^3 - 1} + \frac{1}{2a - 1} - \frac{2a}{4a^2 + 2a + 1}$$

12.

$$\frac{b - a}{a^2b - ab^2 + b^3} + \frac{a - 2b}{a^3 + b^3} - \frac{1}{ab + b^2}$$

13.

$$\frac{8a + 8}{8 - a^3} - \frac{2a}{a^2 + 2a + 4} + \frac{a}{a - 2}$$

14.

$$\frac{x - 3}{x^2 + 3x + 9} + \frac{1}{x - 3} - \frac{3x + 2x^2}{x^3 - 27}$$

15.

$$\frac{2a}{a - 1} - \frac{3a^2 + 2a + 1}{a^3 - 1} + \frac{a + 1}{a^2 + a + 1}$$

16.

$$\frac{4}{x - 1} + \frac{2x^2 + 2x}{x^3 - 1} \cdot \left(\frac{2}{x^2 - x} - \frac{2x}{1 - x^2} \right)$$

17.

$$\left(2x - 1 + \frac{15}{x-3}\right) : \left(x - 3 + \frac{5x}{2x-6}\right)$$

18.

$$\left(\frac{2}{a+4} - \frac{a-3}{a^2-8a+16} + \frac{a-9}{16-a^2}\right) : \frac{a-2}{a^3+a^2-16a-16}$$

19.

$$\left(\frac{a}{a^2-2a+1} - \frac{a}{1-a^2} - \frac{2}{a+1}\right) : \frac{4a^2-1}{a^3-a^2-a+1}$$

20.

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

21.

$$\left[\frac{x^2+4x+4}{x} \cdot \left(\frac{3x}{x^3-8} : \frac{x+2}{3x-6}\right)\right] \cdot \frac{x^2+2x+4}{x+2}$$

22.

$$\left[\left(\frac{3a}{a^3-b^3} : \frac{a+b}{a^2+ab+b^2} - \frac{3}{b-a}\right) : \frac{2a+b}{a^2+2ab+b^2}\right] : \frac{a+b}{3}$$

23.

$$\left[\left(\frac{3}{x-y} + \frac{x^2+xy+y^2}{x+y} : \frac{x^3-y^3}{3x}\right) \cdot \frac{x^2+2xy+y^2}{9(2x+y)}\right] : \frac{x+y}{3}$$

24.

$$\frac{3x-6}{x+2} \cdot \left(\frac{3}{x-2} + \frac{x^2+2x+4}{x+2} : \frac{x^3-8}{3x}\right) \cdot \frac{x^2+4x+4}{2x+2}$$

25.

$$\left(\frac{1}{4x+2} - \frac{1-x}{8x^3+1} : \frac{1-2x}{4x^2-2x+1}\right) : \frac{2x-1}{4x+2} - \frac{1}{4x^2-4x+1}$$

26.

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

27.

$$\left(x + \frac{6x-12}{2x-4}\right) \cdot \frac{1}{2x^2+6x-ax-3a} + \frac{2a}{a^2-4x^2}$$

28.

$$\left(1 + \frac{8c^3}{m^3-8c^3} + \frac{m}{2c-m}\right) \cdot \left(\frac{m+2c}{2c} - \frac{m}{m+2c}\right)$$

29.

$$\left(\frac{2x^2+2x}{7x^3+x^2+7x+1} \cdot \frac{7x+1}{x^2-1} + \frac{x-1}{x^2+1}\right) : \frac{2x+2}{x^2-1}$$

30.

$$\left(\frac{6a+12}{a^2+4a} + \frac{a+3}{a+4} - \frac{2a+3}{a}\right) : \left(1 - \frac{a^2+5a+2}{a^2+4a}\right)$$

31.

$$6x + \left(\frac{x}{x-2} - \frac{x}{x+2}\right) : \frac{4x}{x^4-2x^3+8x-16}$$

32.

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

33.

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

34.

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