

1	$\frac{b^2 - 1}{a^2 b^2} - \frac{2b^2 + 1}{b^2} + \frac{a^2 + 1}{a^2 b^2}$	$\frac{1 - 2a^2}{a^2}$
2	$\left(\frac{3}{x + 2y} - \frac{3}{x - 2y} \right) : \frac{6}{x^2 - 4y^2}$	$-2y$
3	$1 + \frac{2y^3 + x^3}{6x^2 y^2} - \frac{1}{y^2} - \frac{y}{3x^2} - \frac{x}{6y^2}$	$\frac{(y - 1)(y + 1)}{y^2}$
4	$\frac{x(x^2 - 4)}{x^2 + 4x + 4} : (4x^2) : \frac{(x - 2)^2}{2x^2 - 8}$	$\frac{1}{2x}$
5	$\left(\frac{1}{x + 2} + \frac{2x^2}{x^2 + 5x + 6} \right) : \frac{x}{x^2 - x - 6}$	$\frac{(x - 3)(2x^2 + x + 3)}{x^2 + 3x}$
6	$\left(\frac{a}{b^2} - \frac{a - 1}{b + b^2} \right) : \left(\frac{1}{b} + \frac{1}{a} \right)$	$\frac{a}{b^2 + b}$
7	$\frac{x^2 + y^2 + 2xy}{2x^2 y} - \frac{1}{x} - \frac{(x - y)^2}{2x^2 y} + 3$	$\frac{1 + 3x}{x}$
8	$\frac{-2a}{a + b} + \left(\frac{a - 2b}{a + b} - \frac{2a - b}{a - b} + 1 \right) \cdot \frac{a - b}{2a - b}$	-2
9	$\left(\frac{x - 2y}{x^2 + 2xy + y^2} + \frac{2}{x + y} \right) \cdot \left(\frac{1}{x^2} + \frac{2}{xy} + \frac{1}{x^2} \right)$	$\frac{6}{xy(x + y)}$
10	$\frac{a - x}{2b} + \frac{11}{5x} - \frac{a}{2b} + \frac{5x^2 - 2b}{10bx}$	$\frac{2}{x}$
11	$\left(\frac{2x + 2y}{x} + \frac{x^2 - y^2}{xy} - \frac{x^2 + y^2 + 2xy}{xy} \right) : \frac{x + 1}{9(1 - x^2)}$	0
12	$\left(\frac{1}{x + 1} + \frac{1}{x - 3} \right) \cdot (x^2 - 2x - 3) \cdot \left(\frac{1}{x - 1} - \frac{1}{x + 3} \right)$	$\frac{8}{x + 3}$

13	$\left(1 + \frac{1}{x}\right) \cdot \left(\frac{3}{xy - x + y - 1} + \frac{3}{xy - x - y + 1}\right)$	$\frac{6}{(x-1)(y-1)}$
14	$\frac{2y - 10 - xy + 5x}{y(1+y)} : \frac{(x-2)(x+2)}{y^3 - 4y^2 - 5y}$	$-\frac{(y-5)^2}{x+2}$
15	$\left(\frac{1}{x+1} - \frac{1}{x+3}\right) \cdot \left(x + \frac{16}{x-3} + 5\right) : \frac{x+1}{x^2-9}$	2
16	$\frac{a-b}{a+b} \cdot \left(\frac{a}{a-b} + \frac{b}{a+b} + \frac{2b^2}{a^2-b^2}\right)$	1
17	$\frac{x+3y}{2x} + \frac{x-y}{y} - \frac{2x-y}{3y} - \frac{4x^2+9y^2}{6xy}$	$-\frac{2x+y}{6y}$
18	$\frac{2x^4-3y^2}{12x^4y^2} - \frac{2x^2-3}{12x^2y^2} - \frac{9}{36x^4}$	$\frac{x^2-2y^2}{4x^4y^2}$
19	$\left(\frac{1}{x^2+2x+4} + \frac{1}{x^3-8}\right) : \left(\frac{1}{x-2} + 1\right) \cdot \left(\frac{4}{x} + x + 2\right)$	$\frac{1}{x}$
20	$\left[\left(\frac{a}{x} + \frac{b}{y}\right) : \frac{bx+ay}{y^2x^2} + \frac{1}{a}\right] - xy$	$\frac{1}{a}$
21	$\left(1 + \frac{x^2+y^2}{2xy}\right) \cdot \left(\frac{x^2+y^2}{2xy} - 1\right) : \left(\frac{1}{y^2} - \frac{1}{x^2}\right)^2$	$\frac{x^2y^2}{4}$
22	$\left(\frac{1}{x-1} + \frac{1}{x+1} + \frac{4}{x^2-1}\right) : \frac{x^2-4}{x^2-3x+2}$	$\frac{2}{x+1}$
23	$\frac{4x^2+x+1}{3y-3x} \cdot \frac{y^2-x^2}{16x^4-(x+1)^2} \cdot \frac{4x^2-x-1}{x+y}$	$\frac{1}{3}$
24	$\frac{4x+3}{x^2+3x} + \frac{x^2+x}{x^2+4x+3} + \frac{2}{x}$	$\frac{x+3}{x}$

25	$\left(a - 1 + \frac{6}{a - 6}\right) : \left(a - 2 + \frac{3}{a - 6}\right) \cdot \frac{a^2 - 25}{a^2 + a - 20}$	1
26	$\left[\left(\frac{2x}{x + 1} - \frac{x - 1}{x}\right) : \frac{x}{x^2 - 1}\right] \cdot \frac{x^3}{x^4 - 1}$	$\frac{x}{x + 1}$
27	$\left(\frac{4}{a + 1} - \frac{5}{a + 2}\right) : \left(1 - \frac{a^2 + 4a - 1}{a^2 + 3a + 2}\right)$	1
28	$\frac{x}{x - y} \cdot \left(1 - \frac{y^3}{x^3}\right) - \frac{x^2 + 2xy + y^2}{x^2}$	$-\frac{y}{x}$
29	$\frac{8x^3}{x^3 - y^3} \cdot \left(\frac{x^2 + xy + y^2}{4x^2y}\right) : \frac{2x}{xy - y^2}$	1
30	$\left(\frac{2}{3a^2 + 6a} + \frac{1}{a^2 - 2a} - \frac{2}{a^2 - 4}\right) : \left(\frac{1}{a} - \frac{1}{a + 2}\right)$	$-\frac{1}{6}$
31	$\left(\frac{y^2}{x^3 - xy^2} + \frac{1}{x + y} - \frac{y}{x^2 - xy}\right) : \left(\frac{1}{x + y} + \frac{y}{x^2 - y^2}\right)$	$\frac{x - 2y}{x}$
32	$\left(\frac{x + y}{x - y} - \frac{x - y}{x + y}\right) : \left(\frac{x - y}{x + y} + \frac{x + y}{x - y}\right)$	$\frac{2xy}{x^2 + y^2}$
33	$\frac{a + 2b}{2a - 4b} + \frac{8b}{a^2 - 4b^2} : \frac{8b}{a - 2b} + \frac{2b - a}{4b + 2a}$	$\frac{a + 4ab - 2b}{a^2 - 4b^2}$
34	$\left(\frac{y^3 - y^2 - y + 1}{2y}\right) \cdot \left(\frac{y}{y^3 - 1} - \frac{y}{y^3 + 1}\right)$	$\frac{y - 1}{y^4 + y^2 + 1}$
35	$\left(\frac{a - 8}{a^2 + 5a - 6} - \frac{2}{a + 6} + \frac{2}{a - 1}\right) \cdot (a^2 - 1)$	$a + 1$
36	$\left(\frac{2}{b^2 - 3b + 2} + \frac{3}{b^2 - 5b + 4}\right) : \left(\frac{5b^2 - 19b + 14}{b^2 - 6b + 8}\right) : \left(\frac{1}{b^2 + 2b + 1} - \frac{1}{b - 1}\right)$	$\frac{b^2 + 2b + 1}{2 - b - b^3}$

37	$\left[\left(-\frac{2}{x+y} + \frac{2x-y}{x^2-y^2} \right)^2 : \left(\frac{x^2}{x^2-y^2} - 1 \right)^2 \right]^2$	$\frac{1}{y^4}$
38	$\frac{x^3+y^3}{(x+y)^3} : \left[\frac{2x-y}{x+y} - \left(\frac{1}{x} : \frac{1}{x-y} \right) \right] - \left(\frac{x^2-xy}{x^2+y^2+2xy} \right) : \frac{x-y}{x+y}$	0
39	$\left[\left(\frac{a}{b} + 1 \right)^2 : \left(\frac{a}{b} - 1 \right) \right] \cdot \left(\frac{a}{b} - 1 \right)^2 : \left(\frac{a}{b} + 1 \right) + 2 + \frac{2a}{b}$	$\left(\frac{a+b}{b} \right)^2$
40	$\left(\frac{1}{x+y} - \frac{1}{x-y} \right) : \left(\frac{2x}{x^2+2xy+y^2} - \frac{1}{x+y} \right) \cdot \left(\frac{3x}{x^2+3xy+2y^2} - \frac{1}{x+y} \right) : \frac{y}{x+2y}$	$\frac{4}{y-x}$
41	$\left[\left(x + \frac{1}{x+2} \right)^2 - \left(x - \frac{1}{x+2} \right)^2 \right] \cdot \left(\frac{1}{x^2} + \frac{2}{x^3} \right)$	$\frac{4}{x^2}$
42	$\frac{x^2}{x^3-y^3} - \frac{y-x}{x^2+xy+y^2} + \frac{1}{y-x}$	$x \left(\frac{3y-x}{y^3-x^3} \right)$
43	$\frac{x}{x-2} - \frac{x}{x+2} : \frac{4}{x^2-x-2} : \frac{x^2-1}{x^2+x-2}$	$\frac{x^2(4-x)}{4(x-2)}$
44	$\left(\frac{4}{2y+1} + \frac{2}{1+y-2y^2} \right) \cdot \frac{2y^2+3y+1}{3+y-2y^2}$	$\frac{2}{1-y}$
45	$\frac{a^2-5a+6}{a^3-6a^2+12a-8} \cdot \left(\frac{4-a}{a-3} + 2 \right)$	$\frac{1}{a-2}$
46	$\frac{\left[\left(\frac{x}{y} + \frac{y}{x} + 1 \right) : \left(\frac{1}{x} + \frac{1}{y} \right) \right]^2}{\left(\frac{x^3-y^3}{x^2-y^2} \right)^2}$	1
47	$\left(\frac{x-4}{x^2-5x+6} - \frac{x+2}{x^2+x-12} \right) : \frac{12}{x^2+2x-8}$	$\frac{1}{3-x}$

48	$\left[\left(\frac{a}{b} - \frac{b}{a} \right)^3 \cdot \left(\frac{1}{a-b} + \frac{1}{a+b} \right) \cdot \left(\frac{b}{a-b} + 1 \right)^2 \right]^{-1} : \left(\frac{a}{a+b} - \frac{a}{b} \right)^2$	$\frac{b^5}{2a^4}$
49	$\frac{1+a}{1-a} - \frac{1-a}{1+a} : \frac{1+a}{1-a} - \left(1 - \frac{1}{1+a} \right)$	$\frac{3a^3 + 5a}{(1-a)(1+a)^2}$
50	$\left[\left(\frac{1}{x} + \frac{1}{y} - \frac{2}{x+y} \right) \cdot \left(\frac{x}{y} + \frac{y}{x} \right)^{-1} \right] - \frac{2}{x^2 + y^2 + 2xy}$	$\frac{y+x-2}{(x+y)^2}$
51	$\left[\left(\frac{x+1}{x^2-7x+12} - \frac{x+3}{x^2-5x+4} \right) : \left(\frac{2}{x^2-4x+3} + \frac{3}{x^2-5x+6} - \frac{5}{x^2-6x+8} \right) \right]$	$\frac{8(x-2)}{13-7x}$
52	$\left[\left(\frac{a}{b} - 2 + \frac{b}{a} \right) : \left(\frac{a}{b} + 2 + \frac{b}{a} \right) + 1 \right]^{-1} \cdot \left(\frac{2ab}{a^2 + b^2 + 2ab} - 1 \right)$	$-\frac{1}{2}$
53	$\left(\frac{a-a^2}{1+a} + \frac{a}{a^2-a+1} - \frac{a+a^3-a^4}{1+a^3} \right) \cdot \frac{a}{a+1}$	$\frac{a^2}{(a+1)^2}$
54	$\left[\left(\frac{2x}{2x-y} - \frac{y}{2x+y} \right) \cdot \frac{4x^2-2xy}{16x^4-y^4} \cdot \left(1 + \frac{y}{2x} \right) \right] : \frac{1}{2xy-y^2} - 1$	$-\frac{2x}{2x+y}$
55	$\left(\frac{y-1}{y^3+y^2+y+1} + \frac{2y}{y^3-y^2+y-1} - \frac{3}{y^2-1} \right) : \left(\frac{y+1}{y-1} - \frac{y-1}{y+1} \right)$	$-\frac{1}{2y(y^2+1)}$
56	$\left[\left(\frac{3x^2-2}{x-1} + \frac{6x-2}{x-3} \cdot \frac{9-x^2}{3x-1} \right) \right] \cdot \left(\frac{x-1}{2x-3} \right)$	$\frac{(x-2)^2}{2x-3}$
57	$\left(\frac{2x^2+2x+1}{x^2+x} - \frac{x}{x+1} \right) : \left(\frac{1}{x^2} + \frac{2}{x} + 1 \right)$	$\frac{x}{x+1}$
58	$\left(\frac{1}{x-3} + \frac{1}{2x^2-3x-9} \right) \cdot \left(\frac{x^2+2x}{2x+3} \right)^{-1} + \left(\frac{1}{x^2-9} + \frac{1}{x+3} \right) : (x+3)^{-1}$	$\frac{x^2-2x+2}{x^2-3x}$
59	$\left(\frac{a}{b} + \frac{b}{a} + 1 \right) : \left(\frac{1}{a} + \frac{1}{b} \right) : \frac{a^3-b^3}{a^2-b^2}$	1

60	$\left\{ \left[\left(\frac{1}{y-3} + \frac{1}{1-y} \right) \cdot (y^2 - 4y + 3) - \frac{4}{3y-1} \right] \cdot \frac{1}{6} \right\}^2 \cdot \frac{3y^2 - 4y + 1}{y^2 - 2y + 1}$	$\frac{y-1}{3y-1}$
61	$\frac{1}{(a-b)} \cdot \left[a + \left(1 - \frac{a}{b} \right) : \left(\frac{1}{b} + a \right) \right] : \left[\left(\frac{1}{a^2} + 1 \right) : \left(1 - \frac{b}{a} \right) \right] - \frac{1}{ab(ab+1)}$	$\frac{ab-1}{ab}$
62	$\left[\frac{1}{a+2b} - \frac{1}{a^2+4b^2+4ab} \cdot \left(a - \frac{12b^2-2a^2-2ab}{a-2b} \right) \right] : \left(\frac{6b-a}{a^2-4b^2} + \frac{1}{2b-a} \right)$	1
63	$\left(\frac{x+y}{y} + \frac{y}{x} \right) : \left(\frac{x}{y} + \frac{y}{x} - 2 \right) + \left(\frac{2x}{x-y} - \frac{3x^2-2xy+y^2}{x^2-xy} \right) : \left(\frac{x}{y} + \frac{y}{x} - 2 \right)$	$\frac{x^2+2y^2-xy}{(x-y)^2}$
64	$\left[\left(\frac{8x^2}{1+2x} - 2x \right) \cdot \left(2x + \frac{1-4x-8x^3}{4x^2-1} \right) : \left(\frac{2}{2x-1} + \frac{4}{2x+1} - 1 \right) \right] : \left(x - \frac{2x}{2x+1} \right)$	$\frac{12x-2}{4x^2-12x+1}$
65	$\left[\left(\frac{a+b}{a-b} \right)^2 \cdot \left(\frac{ab}{a+b} \right)^3 : \left(\frac{a+b}{a-b} \right)^3 \right] : \left(\frac{a^2-b^2}{a^2+b^2+ab} \cdot \frac{a^3-b^3}{a^2-b^2} : \frac{a+b}{b} \right)$	$\frac{a^3b^2}{(b+a)^3}$
66	$\frac{a-b}{(a^2+b^2+ab)^2} + \left(\frac{a+2b}{b-a} - \frac{5ab+b^2}{b^2-a^2} \right)^3 : \frac{a^6+b^6-2a^3b^3}{a^3+3a^2b+3ab^2+b^3}$	0
67	$\frac{3-x}{3x-1} \cdot \left[\left(\frac{x+1}{x^2-6x+9} - \frac{x-2}{x^2-9} \right) : \left(\frac{1}{x+3} + \frac{1}{x-3} \right) \right]$	$-\frac{3}{2x}$
68	$\left(1 - \frac{y^2-2y}{y^2-2y+1} \right) \cdot \left\{ \left[(2y-1)^3 - \frac{1}{2y-1} \right] : \frac{8y^2-8y}{2y-1} - y^2 \right\}$	1
69	$\left(\frac{2x+1}{x+1} : \frac{x}{x-1} - \frac{2x^2-1}{x^2-x} \right) : \left(\frac{4}{x-1} - \frac{3}{x+1} - \frac{1}{x} \right)$	$\frac{x-5x^2+2}{7x+1}$
70	$\frac{\frac{2}{x+y} - \frac{3}{x-y}}{\frac{x+5y}{x+y}} - \left(\frac{\frac{1}{x+y} - \frac{2}{x-y}}{\frac{x+3y}{x-y}} \right)$	$\frac{2y}{y^2-x^2}$

71	$\left(\frac{x}{y} + \frac{4y}{x} + 4\right) \cdot \left(\frac{\frac{x^3 - 2x^2y + 4xy^2}{x^3 - 8y^3}}{\frac{x^3 + 8y^3}{x^3 + 2x^2y + 4xy^2}}\right) \cdot \frac{y}{x}$	$\frac{x + 2y}{x - 2y}$
72	$\frac{\frac{1}{a+b} - \frac{b^2}{a^3 - ab^2} - \frac{b}{a^2 + ab}}{\frac{1}{a+b} + \frac{b}{a^2 - b^2}}$	$1 - \frac{2b}{a}$
73	$\left(\frac{\frac{2x^2 + 3xy}{3x^2 - 3xy - 6y^2} \cdot \left(\frac{x^2 - 2xy + y^2}{3x}\right)}{\frac{2x^2 + xy - 3y^2}{x^2 - xy - 2y^2}}\right)^2$	$\frac{x^2 + y^2 - 2xy}{81}$
74	$\frac{\left(\frac{1}{x^2 - 4} - \frac{2}{x^2 - 2x} + \frac{4}{3x^2 + 6x}\right) : \left(\frac{10}{x} - \frac{9}{x - 2}\right)}{\frac{1}{x+2} + \frac{x-4}{x^2 - 2x + 4}}$	$\frac{x^2 - 2x + 4}{6(x^2 - 2x - 2)}$
75	$1 - \frac{\left(\frac{2x^3 + x^2 - 2x - 1}{1 + x - 2x^2} + 3\right)^3 - 6x\left(x - \frac{1}{x}\right)}{\frac{x^3 + 12x - 14}{x^3 - 1}}$	x^3
76	$\frac{\frac{2}{x-1} - \frac{3x^2}{2x^2-2} \left(1 - \frac{x}{x+2}\right) + \frac{2-x}{x+1} : (2-x)}{\frac{1}{x} \left(\frac{3}{x+1} - \frac{6}{x+2}\right) + \frac{2}{x^2+x-2}}$	$\frac{7x+2}{5-x}$
77	$\frac{\frac{4y}{x-y} - \frac{4y^2}{x^2-y^2} + \frac{2x}{x+y}}{\left(2 - \frac{y}{x+y}\right) \cdot \frac{(2+x-2y) \cdot (x+y)}{2x^2+xy}}$	$\frac{2x^2}{(x-2y+2)(x-y)}$
78	$\frac{\frac{1+4a^2}{4a}}{8a^2+16a^4+1} + \left(\frac{1+\frac{1}{2a}}{\frac{1}{4a}+\frac{1}{2}}\right)^2 \cdot \frac{1}{12a} - \frac{a}{4a^2+1}$	$\frac{1}{3a}$

79	$\frac{x^n - 2}{x^n + 2} \cdot \left(\frac{2}{x^n + 2} + \frac{x^n}{x^n - 2} + \frac{8}{x^{2n} - 4} \right), n \in \mathbb{N}$	1
80	$\left(\frac{a^n + b^n}{a^n - b^n} + \frac{a^n - b^n}{a^n + b^n} \right) \cdot \left(1 + \frac{a^{2n} + b^{2n}}{2a^n b^n} \right) : \frac{(a^{n+1} - ab^n)(a^{2n} + b^{2n})}{a^{n-1}b^n}$	$\frac{b^n + a^n}{a^2(b^n - a^n)^2}$