

indica per quali valori le seguenti frazioni algebriche perdono di significato

1	$\frac{1}{x}$	$x = 0$
2	$\frac{2}{y^3}$	$y = 0$
3	$\frac{5}{x^2 y^3}$	$x = 0 \vee y = 0$
4	$\frac{3x}{ab}$	$a = 0 \vee b = 0$
5	$\frac{4a}{3b}$	$b = 0$
6	$\frac{2ab}{7x^9}$	$x = 0$
7	$\frac{11xab}{3xy^2z^4}$	$x = 0 \vee y = 0 \vee z = 0$
8	$\frac{3}{x-1}$	$x = 1$
9	$\frac{2x}{x+1}$	$x = -1$
10	$\frac{a^3 b^2}{a^2 - 4}$	$a = \pm 2$
11	$\frac{5a^2}{y^2 + 4}$	$\nexists y \in \mathbb{R}$
12	$\frac{7x}{x+7}$	$x = -7$

13	$\frac{5xy}{xy - 1}$	$xy = 1$
14	$\frac{z - 2}{z + 2}$	$z = -2$
15	$\frac{8x - 1}{x - 8}$	$x = 8$
16	$\frac{5a + b}{a + b}$	$a = -b$
17	$\frac{7a}{a^2 + b^2}$	$a = 0 \wedge b = 0$
18	$\frac{x + y}{x - y}$	$x = y$
19	$\frac{7}{m^2 - 49n^2}$	$m = \pm 7n$
20	$\frac{8}{x^3 - 8y^3}$	$x = 2y$
21	$\frac{6a}{a^2x - 5ax + 6x}$	$a = 2 \vee a = 3 \vee x = 0$
22	$\frac{x^2 - 4}{x^2 - 9x + 8}$	$x = 8 \vee x = 1$
23	$\frac{7x^2 - 1}{x^2 - 9x + 14}$	$x = 2 \vee x = 7$
24	$\frac{x + 2}{a^2 - 2ax + x^2}$	$a = 1$

25	$\frac{x^2 + 3}{x^2 - 9}$	$x = \pm 3$
26	$\frac{a^3 + 8}{a + 8}$	$a = -8$
27	$\frac{a(a + 7)}{a^2 - 6a - 7}$	$a = -1 \vee a = 7$
<i>indica per quali valori le seguenti frazioni algebriche si annullano all'interno del C.E.</i>		
28	$\frac{2}{4x + 10}$	$\nexists x \in \mathbb{R}$
29	$\frac{3x}{9y}$	$x = 0$ con $y \neq 0$
30	$\frac{11a}{7a + 11}$	$a = 0$
31	$\frac{11}{11a - 7}$	$\nexists a \in \mathbb{R}$
32	$\frac{2x - 4}{10x - 12}$	$x = 2$
33	$\frac{3a + 3b - 3c}{12}$	$a + b - c = 0$
34	$\frac{5a + ab}{5c}$	$a = 0 \vee b = -5$
35	$\frac{a + b}{a^2 + b^2}$	$a = -b$ con $b \neq 0$
36	$\frac{3m}{m^2 + 9m}$	$m = 0$ perde di significato

37	$\frac{3x}{12a - 3x}$	$x = 0$ con $a \neq 0$
38	$\frac{5x}{15a - 20b}$	$x = 0$
39	$\frac{x^2 - 9}{3x - 9}$	$x = -3$ $x - 3$ perde di significato
40	$\frac{a^2 + 1}{a^2 - 1}$	$\nexists a \in \mathbb{R}$
41	$\frac{x^3 - 1}{x^2 + 1}$	$x = 1$
determina le condizioni di esistenza delle seguenti frazioni algebriche considerando verificate le condizioni di esistenza		
42	$\frac{(a^2 + 17)^3}{11a}$	$a \neq 0$
43	$\frac{3a}{2b + 8}$	$b \neq -4$
44	$\frac{2x^2}{2x + 3}$	$x \neq -\frac{3}{2}$
45	$\frac{2a + b}{a + 2b}$	$a \neq -2b$
46	$\frac{1}{(a - 1)(a + 5)}$	$a \neq 1 \wedge a \neq -5$
47	$\frac{3x + 5}{x^2 - 9}$	$x \neq -3 \wedge x \neq 3$
48	$\frac{3x}{x^2 + 1}$	$\forall x \in \mathbb{R}$

49	$\frac{b-5}{b^5-27b^2}$	$b \neq 0 \wedge b \neq 3$
50	$\frac{3}{a^2+a}$	$a \neq 0 \wedge a \neq -1$
51	$\frac{a}{bx+3x}$	$x \neq 0 \wedge b \neq -3$
52	$\frac{3a+b}{2a^3-32a}$	$a \neq 0 \wedge a \neq -4 \wedge a \neq 4$
53	$\frac{3b+1}{a^4-256}$	$a \neq -4 \wedge a \neq 4$
54	$\frac{x-1}{x^2-6x+9}$	$x \neq 3$
55	$\frac{7x-1}{x^3+7x^2-x-7}$	$x \neq 1 \wedge x \neq -1 \wedge x \neq -7$
56	$\frac{b+2}{(b^2-9)(b^3-b^2)}$	$b \neq -3 \wedge b \neq 3 \wedge b \neq 0 \wedge b \neq 1$
57	$\frac{11}{(a-1)^3}$	$a \neq 1$
58	$\frac{13a-b}{a^4-b^4}$	$a \neq b \wedge a \neq -b$
59	$\frac{x^2y+1}{x^2-4y^2}$	$x \neq -2y \wedge x \neq 2y$
60	$\frac{2a^2+8a}{(a+7)(3x-2)}$	$a \neq -7 \wedge x \neq \frac{2}{3}$

61	$\frac{x+3}{-x^2-4}$	$\forall x \in \mathbb{R}$
semplificazioni di frazioni algebriche considerando verificate le condizioni di esistenza		
62	$\frac{3x}{9x^2}$	$\frac{1}{3x}$
63	$\frac{8a^3b}{10a^4b^4}$	$\frac{4b}{5ab^3}$
64	$\frac{7x}{14xy-21x}$	$\frac{1}{2y-3}$
65	$\frac{5a^3-10a^2}{5a^3}$	$\frac{a-2}{a}$
66	$\frac{7a^4b^5}{21a^3b}$	$\frac{1}{3}ab^4$
67	$\frac{a^2-4a+4}{3a^2-12}$	$\frac{a-2}{3(a+2)}$
68	$\frac{6xy+3y^2}{8xy+4y^2}$	$\frac{3}{4}$
69	$\frac{x^2+2xy}{xy+2y^2}$	$\frac{x}{y}$
70	$\frac{a^2b^2+abx}{a^2b^2}$	$\frac{ab+x}{ab}$
71	$\frac{3x-3y}{y-x}$	-3
72	$\frac{x^3+3x^2}{x+3}$	x^2

73	$\frac{x^2 + 5x}{5x}$	$\frac{x + 5}{5}$
74	$\frac{a^2 - 3a}{9 - 3a}$	$-\frac{a}{3}$
75	$\frac{bx + ax - by - ay}{by + ay + bx + ax}$	$\frac{x - y}{x + y}$
76	$\frac{9by - 6ax - 3bx + 18ay}{3b + 6a}$	$3y - x$
77	$\frac{6a^2 - 12a + 6}{a^2 - 1}$	$\frac{6(a - 1)}{a + 1}$
78	$\frac{a^3 - b^3}{a^3 b^3}$	<i>non semplificabile</i>
79	$\frac{2x^2 - 8}{x^3 - x^2 - 4x + 4}$	$\frac{2}{x - 1}$
80	$\frac{1 - a^2}{a + b - a^2 - ab}$	$\frac{1 + a}{a + b}$
81	$\frac{x^3 - ax^2}{x^4 - 2ax^3 + a^2x^2}$	$\frac{1}{x - a}$
82	$\frac{4 - 9m^2}{4 - 6m + 2m^2 - 3m^3}$	$\frac{3m + 2}{m^2 + 2}$
83	$\frac{a^2 - 4a + 4}{a^2 - 4}$	$\frac{a + 2}{a - 2}$
84	$\frac{3t^2 - 3}{6t^2 - 6}$	$\frac{1}{2}$

85	$\frac{3x + 3y}{4x + 4y + by + bx}$	$\frac{3}{4 + b}$
86	$\frac{x^2 - 5x + 6}{x^2 - 9}$	$\frac{x - 2}{x + 3}$
87	$\frac{x^2 - 5x + 6}{3x - 9}$	$\frac{x - 2}{3}$
88	$\frac{16x^3 + 8x}{4x^2 + 1}$	<i>non semplificabile</i>
89	$\frac{4a - 4b + (a - b)^2}{(a - b)^2}$	$\frac{4 + a - b}{a - b}$
90	$\frac{x^4 - 1}{x^3 - 1}$	$\frac{(x + 1)(x^2 + 1)}{x^2 + x + 1}$
91	$\frac{bx + 2x - b - 2}{bx - 2x - b + 2}$	$\frac{b + 2}{b - 2}$
92	$\frac{a^3 + 4a^2 + 4a}{4 - a^2}$	$\frac{a(a + 2)}{2 - a}$
93	$\frac{a^2b - 4b}{-2b - ab}$	$2 - a$
94	$\frac{x^3 - y^3}{3x - 3y}$	$\frac{x^2 + xy + y^2}{3}$
95	$\frac{(a - 2)^2 + 2a}{2(a^3 + 8)}$	$\frac{1}{2(a + 2)}$
96	$\frac{x^2 - 4}{x^2 - 4x + 4}$	$\frac{x + 2}{x - 2}$

97	$\frac{a^2 - 2a - 3}{a^2 - 6a + 9}$	$\frac{a + 1}{a - 3}$
98	$\frac{2ab - a^2 - b^2}{a^3 - a^2b}$	$\frac{b - a}{a^2}$
99	$\frac{x^3y^3 - xy}{x^2y^2 + 1 + 2xy}$	$\frac{xy(xy - 1)}{xy + 1}$
100	$\frac{4a^2 - 4ab + b^2 - 1}{4a^2 + b^2 + 1 - 4ab + 4a - 2b}$	$\frac{2a - b - 1}{2a - b + 1}$
101	$\frac{x^3 - y^3}{x^2 - 2xy + y^2}$	$\frac{x^2 + xy + y^2}{x - y}$
102	$\frac{x^3 - y^3}{x^2 - y^2}$	$\frac{x^2 + xy + y^2}{x + y}$
103	$\frac{a^3 - 2a^2 + a}{a^3 - 3a^2 + 3a - 1}$	$\frac{a}{a - 1}$
104	$\frac{x^2 - 3x + 2}{x^2 - x - 2}$	$\frac{x - 1}{x + 1}$
105	$\frac{a^2 + 10ab + 25b^2}{a^4 + 10a^3b + 25a^2b^2}$	$\frac{1}{a^2}$
106	$\frac{x^5 - 16x}{x^3 - 4x}$	$x^2 + 4$
107	$\frac{2a^2 + a - 10}{(a^2 - 4)(2a^2 + 5a)}$	$\frac{1}{a(a + 2)}$
108	$\frac{2a^3 + 2}{a^3 + a^2 + a + 1}$	$\frac{2(a^2 - a + 1)}{a^2 + 1}$

109	$\frac{8x^2 - 8}{4bx + 12x + 4b + 12}$	$\frac{2(x - 1)}{b + 3}$
110	$\frac{x^2 + y^2 - 2xy - z^2}{3x^2 - 3xy - 3xz}$	$\frac{x - y + z}{3x}$
111	$\frac{2a^2 + 2a - 12}{a^3 - 7a + 6}$	$\frac{2}{a - 1}$
112	$\frac{x^3 - 3x^2 + 4}{x^2 - x - 2}$	$x - 2$
113	$\frac{2x^5 + 6x^4 - 36x^3}{2ax^3 - x^3 - 18ax + 9x}$	$\frac{2x^2(x + 6)}{(2a - 1)(x + 3)}$
114	$\frac{a^2 + 2a + 1 - b^2}{a^2 + ab + a}$	$\frac{a + 1 - b}{a}$
115	$\frac{4a^2 - 25b^2}{50b^2 - 8a^2}$	$-\frac{1}{2}$
116	$\frac{9a^2 + 25b^2 - 30ab}{9a - 15b}$	$\frac{3a - 5b}{3}$
117	$\frac{x^4 + 1 - 2x^2}{2x + 1 + x^2}$	$(x - 1)^2$
118	$\frac{x^3 - xy^4}{3x^2 - 3xy^2}$	$\frac{x + y^2}{3}$
119	$\frac{3a^{n+2}b^{n+1}}{2a^nb}$	$\frac{3a^2b^n}{2}$
120	$\frac{4x^{2n} - 12x^n + 9}{4x^{2n} - 9}$	$\frac{2x^n - 3}{2x^n + 3}$

121	$\frac{a^{2n} - b^{2n}}{a^{2n} + 2a^n b^n + b^{2n}}$	$\frac{a^n - b^n}{a^n + b^n}$
122	$\frac{2x^{n+1} + x^{n+2} + x^n}{x^2 - 1}$	$\frac{x^n(x+1)}{x-1}$
123	$\frac{24x^{2n} - 24}{8x^{4n} - 8}$	$\frac{3}{x^{2n} + 1}$
esegui le seguenti somme di frazioni algebriche considerando verificate le condizioni di esistenza		
124	$3 + \frac{1}{x}$	$\frac{3x+1}{x}$
125	$\frac{a}{x} - \frac{b}{2y}$	$\frac{2ay - bx}{2xy}$
126	$\frac{2}{a} - 3x$	$\frac{2 - 3ax}{a}$
127	$x + 1 + \frac{1}{x-1}$	$\frac{x^2}{x-1}$
128	$\frac{1}{6x} - \frac{2}{3x} + \frac{1}{2x}$	0
129	$\frac{1}{2x} - \frac{5}{3x} + \frac{3}{5x}$	$\frac{-17}{30x}$
130	$x - \frac{1}{2x} + \frac{3}{x^2}$	$\frac{2x^3 - x + 6}{2x^2}$
131	$\frac{y}{3x^2} - \frac{5}{2xy} + \frac{1}{6x}$	$\frac{xy + 2y^2 - 15x}{6x^2y}$
132	$\frac{2x^2 + 1}{x^2} - \frac{x + 2}{x} + 3$	$\frac{4x^2 - 2x + 1}{x^2}$

133	$\frac{3}{2ab} + \frac{b}{6a^2} - \frac{a}{9b^2}$	$\frac{27ab + 3b^3 - 2a^3}{18a^2b^2}$
134	$3 + \frac{1}{a} - \frac{a^2 + a + 1}{a + 1}$	$\frac{-a^3 + 2a^2 + 3a + 1}{a(a + 1)}$
135	$\frac{a + 1}{a} - \frac{1}{1 - a}$	$\frac{-a^2 - a + 1}{a(1 - a)}$
136	$\frac{a + 2}{a^2 - 9} + \frac{3}{a}$	$\frac{4a^2 + 2a - 27}{a(a^2 - 9)}$
137	$\frac{2 - y}{x - y} - \frac{1}{y}$	$\frac{3y - y^2 - x}{y(x - y)}$
138	$\frac{2x - 3y}{x - y} - \frac{2x - 3y}{x - y}$	0
139	$\frac{2}{x^2y} + \frac{3y}{xy^2} - 1$	$\frac{2 + 3x - x^2y}{x^2y}$
140	$\frac{a + 2b}{2a} + \frac{a - b}{3a} - \frac{a + 4b}{6a}$	$\frac{2}{3}$
141	$\frac{2x - y}{3} - \frac{x - 2y}{4}$	$\frac{5x + 2y}{12}$
142	$1 - \frac{3x - 2y}{5x + 3y}$	$\frac{2x + 5y}{5x + 3y}$
143	$1 + \frac{xy - 2}{3xy} - \frac{2}{xy}$	$\frac{4xy - 8}{3xy}$
144	$\frac{11}{2a^2b^2} - 1 - \frac{3}{4a^2b^2}$	$\frac{19 - 4a^2b^2}{4a^2b^2}$

145	$\frac{x+y}{2x} - \frac{2x-y}{3y} - \frac{3y-x}{6x}$	$\frac{3y-2x}{3y}$
146	$\frac{(x-y)(x+y)}{xy} + \frac{2y}{x} + 2 - \frac{(x+y)^2}{xy}$	0
147	$-3 - \frac{a-1}{9-9a^2} + \frac{2}{3(a+1)}$	$-\frac{27a+20}{9(a+1)}$
148	$\frac{5x^2-xy}{x^2-y^2} - \frac{3x}{y+x} + \frac{2x}{y-x}$	0
149	$\frac{(b-a)(b^2+ab+a^2)}{2a^2b} - \frac{3b^2+4a^2}{6a^2} + \frac{1}{6}$	$-\frac{a+b}{2b}$
150	$\frac{1}{x-2} - \frac{2}{x+3} - \frac{5}{x^2+x-6}$	$-\frac{1}{x+3}$
151	$\frac{x-y}{x+y} - \frac{1-y^2}{x^2+y^2+2xy}$	$\frac{x^2-1}{(x+y)^2}$
152	$\frac{x-1}{x^2-y^2} - \frac{y-1}{xy-y^2}$	$\frac{x-y^2}{y(x^2-y^2)}$
153	$\frac{a}{a+2} - \frac{a-3}{a^2-4}$	$\frac{a^2-3a+3}{a^2-4}$
154	$\frac{2x+3y}{x-y} + \frac{x+2y}{y-x}$	$\frac{x+y}{x-y}$
155	$\frac{2x-3y}{x-y} - \frac{2x-3y}{y-x}$	$\frac{4x-6y}{x-y}$
156	$\frac{2x-3y}{x-y} - \frac{2x-3y}{x+y}$	$\frac{4xy-6y^2}{x^2-y^2}$

157	$\frac{2a+3b}{a+2b} + \frac{2a-3b}{a+2b}$	$\frac{4a}{a+2b}$
158	$\frac{1}{a+1} + \frac{1}{a-1} - \frac{1}{a}$	$\frac{a^2+1}{a(a^2-1)}$
158	$a + \frac{1}{a-1} + \frac{1}{1-a}$	a
160	$\frac{1}{m^2-3m+2} + \frac{1}{m-2} - \frac{1}{1-m}$	$\frac{2}{m-2}$
161	$a + \frac{1}{a-1} - \frac{1}{1-a}$	$\frac{a^2-a+2}{a-1}$
162	$\frac{5a-2}{a} - \frac{5a}{5a+2} - 1$	$\frac{15a^2-2a-4}{a(5a+2)}$
163	$\frac{2m-n}{m-n} + \frac{n-3m}{2m-n} - \frac{n^2}{2m^2-3mn+n^2}$	$\frac{m+n}{2m-n}$
164	$\frac{2x}{x+3} - \frac{3x}{2x+4} - \frac{1}{x^2+5x+6}$	$\frac{x^2-x-2}{2(x^2+5x+6)}$
165	$-\frac{ax+ay}{bx^2-by^2} + \frac{b}{ax-ay}$	$\frac{b^2-a^2}{ab(x-y)}$
166	$\frac{a-1}{a-4} - \frac{a+2}{a-3} - \frac{3}{a^2-7a+12}$	$\frac{2}{3-a}$
167	$\frac{a-4}{a^2+9-6a} - \frac{a+3}{a^2+a-12}$	$\frac{-7}{(a-3)^2(a+4)}$
168	$\frac{3a}{a-b} - \frac{3(a+b)^2}{a^2-ab} - \frac{3b}{a}$	$\frac{9b}{b-a}$
169	$\frac{a}{3a-3b} + \frac{b}{2a-2b} + \frac{a+4b}{6b-6a}$	$\frac{1}{6}$

170	$\frac{4x^2 + 4x + 1}{4x - 8x^2} - \frac{4x^2 + 1}{4x} + x$	$\frac{2x + 3}{2 - 4x}$
171	$\frac{x^2}{xy - y^2} - \frac{x^2 + y^2}{x^2 - y^2} - \frac{y^2}{xy + y^2}$	$\frac{x}{y}$
172	$\frac{x + 1}{xy^2} - \frac{x - 1}{x^2y} + \frac{x^2y - x^3 + x + y}{x^3y^2 - x^2y^2}$	$\frac{2}{xy(x - 1)}$
173	$\frac{x + 2}{x^2 + x} + \frac{x + 1}{-x^2 - 2x - 1} - \frac{1}{x}$	$\frac{1 - x}{x(x + 1)}$
174	$-\frac{-b^2}{3ab - 9a^2} + \frac{3a}{b + 3a} + \frac{b^2 + 9a^2}{b^2 - 9a^2}$	$\frac{b(b + 3a)}{3a(b - 3a)}$
175	$\frac{2 + a}{a + 3} - \frac{3a - 1}{a^2 + a - 6} - \frac{a}{a + 3}$	$\frac{1}{2 - a}$
176	$\frac{x^2 + 2x + 1}{x^2 - 2x + 1} + \frac{x - 1}{1 + x} - \frac{2x^3 + 6}{x^3 - x^2 - x + 1}$	$\frac{6}{x^2 - 1}$
177	$\frac{2a + 4}{a - 9} - \frac{3a^2 + 13a - 8}{a^2 - 2a - 63} + \frac{2a - 5}{a + 7}$	$\frac{a - 9}{a + 7}$
178	$\frac{1}{x + 5} - \frac{x^2 - 5x}{x^3 + 125} - \frac{5 - x}{x^2 - 5x + 25}$	$\frac{x^2}{x^3 + 125}$
179	$\frac{a - 2b}{a + b} - \frac{a + 2b}{a - b} + \frac{3ab}{a^2 - b^2}$	$-\frac{3ab}{a^2 - b^2}$
180	$\frac{a + 2}{a^2 + a - 2} - \frac{1}{a - 1} + \frac{a}{a + 2}$	$\frac{a}{a + 2}$
181	$\frac{x}{x^2 - 3x + 2} - \frac{x^2 - x}{x - 2} + 2x$	$\frac{x(x - 2)}{x - 1}$

182	$\frac{x+1}{x^2-xy} - \frac{y-2}{xy-y^2} - \frac{3}{x-y}$	$\frac{3xy-y-2x}{xy(y-x)}$
183	$\frac{1}{(x-3)(x-1)} - \frac{1}{x-3} + \frac{2}{x^2-2x-3}$	$-\frac{x}{x^2-1}$
184	$\frac{1}{(a-b)(a-x)} + \frac{1}{(b-a)(b-x)} + \frac{1}{(x-a)(x-b)}$	0
185	$\frac{a^2}{a^2-b^2} + \frac{b^2}{b^2-a^2} - \frac{ab-b^2}{2ab-a^2-b^2}$	$\frac{a}{a-b}$
186	$\frac{1}{x^2-2x+1} + x^2+2x+1 + \frac{2x^2(x-1)}{x^3-3x^2+3x-1}$	$\frac{x^4+2}{(x-1)^2}$
187	$\frac{2}{x+2} + \frac{1}{-x-2} + \frac{9x^2-3x}{3x^2+5x-2}$	$\frac{3x+1}{x+2}$
188	$\frac{x}{x+1} + \frac{x^2-xy+2x}{xy-x+y-1} - \frac{y}{1-y}$	$\frac{x+y}{y-1}$
189	$\frac{x-1}{(x-2)^2-(x-3)^2} + \frac{3x-6}{2x-5} - \frac{6x-15}{25+4x^2-20x}$	2
190	$-\frac{1}{x} + \frac{x^2+2y^2}{x^3+y^3} + \frac{x+2y}{x^2+y^2-xy} + \frac{y^2-4xy}{x^3+xy^2-x^2y}$	$\frac{1}{x+y}$
191	$\frac{3}{a^n-2} + \frac{2}{a^n}$	$\frac{5a^n-4}{a^{2n}-2a^n}$
192	$\frac{x^{2n}}{x^{2n}+y^{2n}} + \frac{1}{2} + \frac{y^{2n}}{y^{2n}+x^{2n}}$	$\frac{3}{2}$
193	$\frac{1}{1+a^n} + \frac{1}{1-a^n} - \frac{2a^n}{1-a^{2n}}$	$\frac{2}{1+a^n}$

194	$\frac{a}{x^n + 1} - \frac{b}{x^n - 1} + \frac{bx^n - ax^n}{x^{2n} - 1}$	$\frac{a + b}{1 - x^{2n}}$
195	$\frac{a^n + 2}{a^{2n} + a^n} + \frac{a^n + 1}{-a^{2n} - 2a^n - 1} - \frac{1}{a^n}$	$\frac{1 - a^n}{a^n(1 + a^n)}$
esegui le moltiplicazioni e divisioni di frazioni algebriche considerando verificate le condizioni di esistenza		
196	$\frac{ab}{7c} \cdot \frac{c}{b^2}$	$\frac{a}{7b}$
197	$3 \cdot \frac{mn}{6a}$	$\frac{mn}{2a}$
198	$\frac{6}{10x^3y^2} \cdot \frac{5x^2y}{3}$	$\frac{1}{xy}$
199	$-\frac{27b^3y^2}{3} \cdot \frac{2y}{45a^2x^2} \cdot \frac{3ax}{2by}$	$-\frac{3b^2y^2}{5ax}$
200	$\frac{a^2 - b^2}{a^2 + b^2} \cdot \frac{a^4 - b^4}{a + b}$	$(a + b)(a - b)^2$
201	$\frac{4y^2}{y^2 - x^2} \cdot \frac{x + y}{2y}$	$\frac{2y}{y - x}$
202	$\frac{a^2 + a + 1}{b^2} \cdot \frac{3b^3 - 3ab^3}{1 - a^3}$	$3b$
203	$\frac{x^3 - 8}{8 + x^3} \cdot \frac{x + 2}{4 + 2x + x^2}$	$\frac{x - 2}{4 - 2x + x^2}$
204	$\frac{x^2 - 2x - 3}{x^2 + 2x - 15} \cdot \frac{x^2 - 4x + 4}{x + 2} \cdot \frac{x^2 + 7x + 10}{x^2 - x - 2}$	$x - 2$
205	$\frac{2a}{1 - 4a^2} \cdot \frac{4a^2 + 4a + 1}{2a - 6}$	$\frac{a(1 + 2a)}{(1 - 2a)(a - 3)}$

206	$\frac{x^2 - 1}{x} \cdot \frac{x + 2}{x} \cdot \frac{x^2}{x^2 + 3x + 2}$	$x - 1$
207	$\frac{a^2 + a}{a + 3} \cdot \frac{a^2 + 6a + 9}{2a + 6} \cdot \frac{1}{a^2 + a}$	$\frac{1}{2}$
208	$\frac{x^2 + y^2 - xy}{x^2y^2} \cdot \frac{x^3y^2}{x^3 + y^3}$	$\frac{x}{x + y}$
209	$\frac{a^2 + 2ab + b^2}{b^2} \cdot \frac{b^3}{a^3 + 3a^2b + 3ab^2 + b^3}$	$\frac{b}{a + b}$
210	$\frac{4(x + 3) + x - 3}{x^2(x - 3)(x + 3)} \cdot \frac{-9x^2 + x^4}{25x^2 - 81}$	$\frac{1}{5x - 9}$
211	$\frac{10a^2 - 10b^2}{x^2 - xy} \cdot \frac{x^2 - 2xy + y^2}{2a^2 - 4ab + 2b^2}$	$\frac{5(a + b)(x - y)}{x(a - b)}$
212	$(7a^n b^{n+2}) \cdot \frac{3}{14a^{n+1}b^2} \cdot \left(-\frac{6b^n}{a}\right)$	$-\frac{9b^{2n}}{a^2}$
213	$\frac{5x - 5y}{3xy} : \frac{x^2}{x - y}$	$\frac{5(x - y)^2}{3x^3y}$
214	$\frac{x^0}{y^0} : \frac{x}{y}$	$\frac{y}{x}$
215	$10a^3b^3 : \left(-\frac{5b^4}{a^3}\right)$	$-\frac{2a^6}{b}$
216	$\frac{a^2 - a}{a + 1} \cdot \frac{4a + 4}{a^2 - 1}$	$\frac{4a}{a + 1}$
217	$(x + 1) \cdot \frac{x - 1}{3x^2 + 2x - 1}$	$\frac{x - 1}{3x - 1}$

218	$\frac{a^2 - 9}{2a - 4} \cdot \frac{a^2 - 4}{3a + 9}$	$\frac{(a + 2)(a - 3)}{6}$
219	$\frac{a^2 + ab}{x^2 - xy} \cdot \frac{x^2 - y^2}{a^2 - b^2} \cdot \frac{ax - xb}{5x + 5y}$	$\frac{a}{5}$
220	$\frac{2a^2 + 4ab + 2b^2}{3a^2b} : \frac{4b^2 - 4a^2}{9ab^2}$	$\frac{3b(a + b)}{2a(b - a)}$
221	$\frac{4a^3b^2}{15xy} : \left(\frac{16a^4b^4}{35x^3b^2} : \frac{8a^2b^2}{49xy} \right)$	$\frac{2xab^2}{21y^2}$
222	$\frac{2x - 3y}{x^2 - y^2} : \left(\frac{9y^2 + 4x^2 - 12xy}{x^3 + xy^2 - 2x^2y} : \frac{2x^2 - 3xy}{x^3 - x^2y} \right)$	$\frac{1}{x + y}$
223	$\frac{3y}{y - 5} : \left(\frac{y - 1}{2y - 10} : \frac{6y}{y^2 - 1} \right)$	$\frac{36y^2}{(y - 1)^2(y + 1)}$
224	$\frac{x^3 - xy^2}{x^2 + 2xy + y^2} : \left(\frac{x^2 - 2xy + y^2}{x^2y - y^3} : xy \right)$	x^2y^2
225	$\frac{4x^2y^3}{5x - 5} : \left(\frac{8x^5y^3}{10x - 10} : \frac{y}{x^4} \right)$	$\frac{y}{x^7}$
226	$\frac{2a^3}{a + b} : \left(\frac{4ab}{a^2 + 2ab + b^2} : \frac{a^2 - b^2}{ab - b^2} \right)$	$\frac{a^2(a + b)^2}{2b^2}$
227	$\frac{4(x + 2) - 5 - 5x}{(x + 1)(x + 2)} : \frac{-x + 3}{x^2 + 3x + 2}$	1
228	$\left[\left(\frac{y^2 - x^2}{x^2y^2} \right) : \left(\frac{y - x}{xy} \right) \right] : \frac{x + y}{xy}$	1
229	$\frac{a^2 - 3a}{a^2 - 1} : \frac{9a + 3a(a - 1) - 2a(a + 1)}{3(a - 1)(a + 1)}$	$\frac{3(a - 3)}{a + 4}$

230	$\frac{-x^2 + y}{xy} : \frac{2xy - (y + 2xy - x^2)}{2xy} : \left(-\frac{1}{x}\right)$	$2x$
231	$\frac{-(x - 3y) + x + y}{x + y} : \frac{-3(x - y) + 3x + y}{x - y}$	$\frac{x - y}{x + y}$
232	$\frac{2a - 3b}{a^2 - b^2} : \frac{4a^2 - 6ab}{3a - 3b} \cdot \frac{a^2 + ab}{3}$	$\frac{1}{2}$
233	$\frac{x^3 + y^3}{x^2 - y^2} : \frac{x^2 - xy + y^2}{x^2 - 2xy + y^2} \cdot \frac{x - y}{3x}$	$\frac{(x - y)^2}{3x}$
234	$\frac{2x^3}{x + y} \cdot \frac{x^2 + 2xy + y^2}{4xy} \cdot \left(-\frac{2y}{y^2 - x^2}\right)$	$\frac{x^2}{x - y}$
235	$\left(a - \frac{1}{b}\right) \cdot \left(a + \frac{1}{b}\right) \cdot \left(\frac{b^2}{a^2b^2 + 2ab + 1}\right)$	$\frac{ab - 1}{ab + 1}$
236	$\frac{x^4 - y^4}{x^3 + x^2} \cdot \frac{x}{x^3 + xy^2 - y^2 - x^2} \cdot \frac{1 - x^2}{y - x}$	$\frac{x + y}{x}$
237	$\left(1 - \frac{4}{a^2}\right) \cdot \left(\frac{a}{a + 1} + \frac{4}{a^2 - a - 2}\right) : \frac{a^3 - a^4 + 8 - 8a}{2 - 2a}$	$\frac{2}{a^2(a + 1)}$
238	$\frac{b}{b^2 - a^2} \cdot (b - a) : \left[\left(\frac{b - a}{b}\right) \cdot \left(\frac{ab}{b^2 - a^2}\right)\right]$	$\frac{b}{a}$
239	$\frac{2}{x} \cdot \frac{(x + y)(x - y) + 2y^2}{2y(x - y)} : \frac{x^2 + y^2}{xy - y^2}$	$\frac{1}{x}$
240	$\frac{y + 1}{y - 1} \cdot \frac{y^2 + y - 2}{y^2 + y} : (y^2 - 4)$	$\frac{1}{y(y - 2)}$
241	$\frac{4(b - 1) - (3b - 5)}{b^2 - 4b + 3} \cdot \frac{b^3 + 3b - 4b^2}{b^2 + 3b} : (b + 3)$	$\frac{b + 1}{(b + 3)^2}$

242	$\left[\frac{x^2 - 6x + 9}{3x} \cdot \frac{6x}{x-3} \right] \cdot \frac{x-2}{x^2 - x - 6} : (x+2)$	$\frac{2x-4}{(x+2)^2}$
243	$\frac{a+a^3 - a(a^2-1)}{(a^2-1)(1+a^2)} \cdot \frac{a^3 - a^2 + a - 1}{3a+1} : \frac{6}{a}$	$\frac{a^2}{3(a+1)(3a+1)}$
244	$\frac{ab - a(a+b)}{a+b} \cdot \frac{ab - b(a+b)}{a+b} \cdot \frac{a^2 + 2ab + b^2}{ab} : ab$	1
245	$(y^4 - 2y^3) \left(1 + \frac{2}{y} + \frac{4}{y^2} \right) : y$	$y^3 - 8$
246	$\left(a + \frac{4}{a} + 4 \right) \cdot \left(2a - \frac{a^2 + a}{a+2} \right) \cdot \frac{1}{a+3} : (a+2)^2$	$\frac{1}{a+2}$
247	$2x \left(1 - \frac{x-1}{2x} - \frac{2y}{x+y} \right) (x+y)$	$x^2 + x + y - 3xy$
248	$\frac{1+x+2x^2 - x(1+x)}{x(1-x)(1+x)} \cdot \frac{x^2+1+2x}{x^2+1} \cdot \frac{x}{x+1} : \frac{1}{1-x}$	1
249	$\frac{2xb}{x^2 - xy + y^2} \cdot \frac{x^3 + y^3}{x^2 + xy} : 2b^2$	$\frac{1}{b}$
250	$\frac{(x-1)(x^2+x+1)+1}{x-1} \cdot \frac{(x+1)(x^2-x+1)-1}{x+1} : \frac{1}{x^2+2x+1}$	$\frac{x^6(x+1)}{x-1}$
251	$\frac{(x+y)^2 - x^2 - y^2}{x+y} \cdot \frac{x^2 - y^2}{2x^2y^2} : (x^2 - y^2)$	$\frac{1}{xy(x+y)}$
esercizi di riepilogo considerando verificate le condizioni di esistenza		
252	$\frac{b^2 - 1}{a^2b^2} - \frac{2b^2 + 1}{b^2} + \frac{a^2 + 1}{a^2b^2}$	$\frac{1 - 2a^2}{a^2}$
253	$\left(\frac{3}{x+2y} - \frac{3}{x-2y} \right) : \frac{6}{x^2 - 4y^2}$	$-2y$

254	$1 + \frac{2y^3 + x^3}{6x^2y^2} - \frac{1}{y^2} - \frac{y}{3x^2} - \frac{x}{6y^2}$	$\frac{(y-1)(y+1)}{y^2}$
255	$\frac{x(x^2 - 4)}{x^2 + 4x + 4} : (4x^2) : \frac{(x-2)^2}{2x^2 - 8}$	$\frac{1}{2x}$
256	$\left(\frac{1}{x+2} + \frac{2x^2}{x^2 + 5x + 6} \right) : \frac{x}{x^2 - x - 6}$	$\frac{(x-3)(2x^2 + x + 3)}{x(x+3)}$
257	$\left(\frac{a}{b^2} - \frac{a-1}{b+b^2} \right) : \left(\frac{1}{b} + \frac{1}{a} \right)$	$\frac{a}{b^2 + b}$
258	$\frac{x^2 + y^2 + 2xy}{2x^2y} - \frac{1}{x} - \frac{(x-y)^2}{2x^2y} + 3$	$\frac{1+3x}{x}$
259	$\frac{-2a}{a+b} + \left(\frac{a-2b}{a+b} - \frac{2a-b}{a-b} + 1 \right) \cdot \frac{a-b}{2a-b}$	-2
260	$\left(\frac{x-2y}{x^2 + 2xy + y^2} + \frac{2}{x+y} \right) \cdot \left(\frac{1}{x^2} + \frac{2}{xy} + \frac{1}{x^2} \right)$	$\frac{6}{xy(x+y)}$
261	$\frac{a-x}{2b} + \frac{11}{5x} - \frac{a}{2b} + \frac{5x^2 - 2b}{10bx}$	$\frac{2}{x}$
262	$\left(\frac{2x+2y}{x} + \frac{x^2 - y^2}{xy} - \frac{x^2 + y^2 + 2xy}{xy} \right) : \frac{x+1}{9(1-x^2)}$	0
263	$\left(\frac{1}{x+1} + \frac{1}{x-3} \right) \cdot (x^2 - 2x - 3) \cdot \left(\frac{1}{x-1} - \frac{1}{x+3} \right)$	$\frac{8}{x+3}$
264	$\left(1 + \frac{1}{x} \right) \cdot \left(\frac{3}{xy - x + y - 1} + \frac{3}{xy - x - y + 1} \right)$	$\frac{6}{(x-1)(y-1)}$
265	$\frac{2y - 10 - xy + 5x}{y(1+y)} : \frac{(x-2)(x+2)}{y^3 - 4y^2 - 5y}$	$-\frac{(y-5)^2}{x+2}$

266	$\left(\frac{1}{x+1} - \frac{1}{x+3}\right) \cdot \left(x + \frac{16}{x-3} + 5\right) : \frac{x+1}{x^2-9}$	2
267	$\frac{a-b}{a+b} \cdot \left(\frac{a}{a-b} + \frac{b}{a+b} + \frac{2b^2}{a^2-b^2}\right)$	1
268	$\frac{x+3y}{2x} + \frac{x-y}{y} - \frac{2x-y}{3y} - \frac{4x^2+9y^2}{6xy}$	$-\frac{2x+y}{6y}$
269	$\frac{2x^4-3y^2}{12x^4y^2} - \frac{2x^2-3}{12x^2y^2} - \frac{9}{36x^4}$	$\frac{x^2-2y^2}{4x^4y^2}$
270	$\left(\frac{1-2x}{1-4x^2}\right)^2$	$\frac{1}{(1+2x)^2}$
271	$\left(-\frac{3}{2} \cdot \frac{a^3b}{c^2}\right)^3$	$-\frac{27a^9b^3}{8c^6}$
272	$\left(\frac{1}{x^2+2x+4} + \frac{1}{x^3-8}\right) : \left(\frac{1}{x-2} + 1\right) \cdot \left(\frac{4}{x} + x + 2\right)$	$\frac{1}{x}$
273	$\left[\left(\frac{a}{x} + \frac{b}{y}\right) : \frac{bx+ay}{y^2x^2} + \frac{1}{a}\right] - xy$	$\frac{1}{a}$
274	$\left(1 + \frac{x^2+y^2}{2xy}\right) \cdot \left(\frac{x^2+y^2}{2xy} - 1\right) : \left(\frac{1}{y^2} - \frac{1}{x^2}\right)^2$	$\frac{x^2y^2}{4}$
275	$\left(\frac{1}{x-1} + \frac{1}{x+1} + \frac{4}{x^2-1}\right) : \frac{x^2-4}{x^2-3x+2}$	$\frac{2}{x+1}$
276	$\frac{4x^2+x+1}{3y-3x} \cdot \frac{y^2-x^2}{16x^4-(x+1)^2} \cdot \frac{4x^2-x-1}{x+y}$	$\frac{1}{3}$
277	$\frac{4x+3}{x^2+3x} + \frac{x^2+x}{x^2+4x+3} + \frac{2}{x}$	$\frac{x+3}{x}$

278	$\left(a - 1 + \frac{6}{a - 6}\right) : \left(a - 2 + \frac{3}{a - 6}\right) \cdot \frac{a^2 - 25}{a^2 + a - 20}$	1
279	$\left[\left(\frac{2x}{x + 1} - \frac{x - 1}{x}\right) : \frac{x}{x^2 - 1}\right] \cdot \frac{x^3}{x^4 - 1}$	$\frac{x}{x + 1}$
280	$\left(\frac{4}{a + 1} - \frac{5}{a + 2}\right) : \left(1 - \frac{a^2 + 4a - 1}{a^2 + 3a + 2}\right)$	1
281	$\frac{x}{x - y} \cdot \left(1 - \frac{y^3}{x^3}\right) - \frac{x^2 + 2xy + y^2}{x^2}$	$-\frac{y}{x}$
282	$\frac{8x^3}{x^3 - y^3} \cdot \left(\frac{x^2 + xy + y^2}{4x^2y}\right) : \frac{2x}{xy - y^2}$	1
283	$\left(\frac{2}{3a^2 + 6a} + \frac{1}{a^2 - 2a} - \frac{2}{a^2 - 4}\right) : \left(\frac{1}{a} - \frac{1}{a + 2}\right)$	$-\frac{1}{6}$
284	$\left(\frac{y^2}{x^3 - xy^2} + \frac{1}{x + y} - \frac{y}{x^2 - xy}\right) : \left(\frac{1}{x + y} + \frac{y}{x^2 - y^2}\right)$	$\frac{x - 2y}{x}$
285	$\left(\frac{x + y}{x - y} - \frac{x - y}{x + y}\right) : \left(\frac{x - y}{x + y} + \frac{x + y}{x - y}\right)$	$\frac{2xy}{x^2 + y^2}$
286	$\frac{a + 2b}{2a - 4b} + \frac{8b}{a^2 - 4b^2} : \frac{8b}{a - 2b} + \frac{2b - a}{4b + 2a}$	$\frac{a + 4ab - 2b}{a^2 - 4b^2}$
287	$\left(\frac{y^3 - y^2 - y + 1}{2y}\right) \cdot \left(\frac{y}{y^3 - 1} - \frac{y}{y^3 + 1}\right)$	$\frac{y - 1}{y^4 + y^2 + 1}$
288	$\left(\frac{a - 8}{a^2 + 5a - 6} - \frac{2}{a + 6} + \frac{2}{a - 1}\right) \cdot (a^2 - 1)$	$a + 1$
289	$\left(\frac{2}{b^2 - 3b + 2} + \frac{3}{b^2 - 5b + 4}\right) : \left(\frac{5b^2 - 19b + 14}{b^2 - 6b + 8}\right) : \left(\frac{1}{b^2 + 2b + 1} - \frac{1}{b - 1}\right)$	$\frac{b^2 + 2b + 1}{2 - b - b^3}$

290	$\left[\left(-\frac{2}{x+y} + \frac{2x-y}{x^2-y^2} \right)^2 : \left(\frac{x^2}{x^2-y^2} - 1 \right)^2 \right]^2$	$\frac{1}{y^4}$
291	$\frac{x^3+y^3}{(x+y)^3} : \left[\frac{2x-y}{x+y} - \left(\frac{1}{x} : \frac{1}{x-y} \right) \right] - \left(\frac{x^2-xy}{x^2+y^2+2xy} \right) : \frac{x-y}{x+y}$	0
292	$\left[\left(\frac{a}{b} + 1 \right)^2 : \left(\frac{a}{b} - 1 \right) \right] \cdot \left(\frac{a}{b} - 1 \right)^2 : \left(\frac{a}{b} + 1 \right) + 2 + \frac{2a}{b}$	$\left(\frac{a+b}{b} \right)^2$
293	$\left(\frac{1}{x+y} - \frac{1}{x-y} \right) : \left(\frac{2x}{x^2+2xy+y^2} - \frac{1}{x+y} \right) \cdot \left(\frac{3x}{x^2+3xy+2y^2} - \frac{1}{x+y} \right) : \frac{y}{x+2y}$	$\frac{4}{y-x}$
294	$\left[\left(x + \frac{1}{x+2} \right)^2 - \left(x - \frac{1}{x+2} \right)^2 \right] \cdot \left(\frac{1}{x^2} + \frac{2}{x^3} \right)$	$\frac{4}{x^2}$
295	$\frac{x^2}{x^3-y^3} - \frac{y-x}{x^2+xy+y^2} + \frac{1}{y-x}$	$x \left(\frac{3y-x}{y^3-x^3} \right)$
296	$\frac{x}{x-2} - \frac{x}{x+2} : \frac{4}{x^2-x-2} : \frac{x^2-1}{x^2+x-2}$	$\frac{x^2(4-x)}{4(x-2)}$
297	$\left(\frac{4}{2y+1} + \frac{2}{1+y-2y^2} \right) \cdot \frac{2y^2+3y+1}{3+y-2y^2}$	$\frac{2}{1-y}$
298	$\frac{a^2-5a+6}{a^3-6a^2+12a-8} \cdot \left(\frac{4-a}{a-3} + 2 \right)$	$\frac{1}{a-2}$
299	$\frac{\left[\left(\frac{x}{y} + \frac{y}{x} + 1 \right) : \left(\frac{1}{x} + \frac{1}{y} \right) \right]^2}{\left(\frac{x^3-y^3}{x^2-y^2} \right)^2}$	1
300	$\left(\frac{x-4}{x^2-5x+6} - \frac{x+2}{x^2+x-12} \right) : \frac{12}{x^2+2x-8}$	$\frac{1}{3-x}$

301	$\left[\left(\frac{a-b}{b} - \frac{b}{a} \right)^3 \cdot \left(\frac{1}{a-b} + \frac{1}{a+b} \right) \cdot \left(\frac{b}{a-b} + 1 \right)^2 \right]^{-1} : \left(\frac{a}{a+b} - \frac{a}{b} \right)^2$	$\frac{b^5}{2a^4}$
302	$\frac{1+a}{1-a} - \frac{1-a}{1+a} : \frac{1+a}{1-a} - \left(1 - \frac{1}{1+a} \right)$	$\frac{3a^3 + 5a}{(1-a)(1+a)^2}$
303	$\left[\left(\frac{1}{x} + \frac{1}{y} - \frac{2}{x+y} \right) \cdot \left(\frac{x}{y} + \frac{y}{x} \right)^{-1} \right] - \frac{2}{x^2 + y^2 + 2xy}$	$\frac{y+x-2}{(x+y)^2}$
304	$\left[\left(\frac{x+1}{x^2-7x+12} - \frac{x+3}{x^2-5x+4} \right) : \left(\frac{2}{x^2-4x+3} + \frac{3}{x^2-5x+6} - \frac{5}{x^2-6x+8} \right) \right]$	$\frac{8(x-2)}{13-7x}$
305	$\left[\left(\frac{a}{b} - 2 + \frac{b}{a} \right) : \left(\frac{a}{b} + 2 + \frac{b}{a} \right) + 1 \right]^{-1} \cdot \left(\frac{2ab}{a^2 + b^2 + 2ab} - 1 \right)$	$-\frac{1}{2}$
306	$\left(\frac{a-a^2}{1+a} + \frac{a}{a^2-a+1} - \frac{a+a^3-a^4}{1+a^3} \right) \cdot \frac{a}{a+1}$	$\frac{a^2}{(a+1)^2}$
307	$\left[\left(\frac{2x}{2x-y} - \frac{y}{2x+y} \right) \cdot \frac{4x^2-2xy}{16x^4-y^4} \cdot \left(1 + \frac{y}{2x} \right) \right] : \frac{1}{2xy-y^2} - 1$	$-\frac{2x}{2x+y}$
308	$\left(\frac{y-1}{y^3+y^2+y+1} + \frac{2y}{y^3-y^2+y-1} - \frac{3}{y^2-1} \right) : \left(\frac{y+1}{y-1} - \frac{y-1}{y+1} \right)$	$-\frac{1}{2y(y^2+1)}$
309	$\left[\left(\frac{3x^2-2}{x-1} + \frac{6x-2}{x-3} \cdot \frac{9-x^2}{3x-1} \right) \right] \cdot \left(\frac{x-1}{2x-3} \right)$	$\frac{(x-2)^2}{2x-3}$
310	$\left(\frac{2x^2+2x+1}{x^2+x} - \frac{x}{x+1} \right) : \left(\frac{1}{x^2} + \frac{2}{x} + 1 \right)$	$\frac{x}{x+1}$
311	$\left(\frac{1}{x-3} + \frac{1}{2x^2-3x-9} \right) \cdot \left(\frac{x^2+2x}{2x+3} \right)^{-1} + \left(\frac{1}{x^2-9} + \frac{1}{x+3} \right) : (x+3)^{-1}$	$\frac{x^2-2x+2}{x^2-3x}$
312	$\left(\frac{a}{b} + \frac{b}{a} + 1 \right) : \left(\frac{1}{a} + \frac{1}{b} \right) : \frac{a^3-b^3}{a^2-b^2}$	1

313	$\left\{ \left[\left(\frac{1}{y-3} + \frac{1}{1-y} \right) \cdot (y^2 - 4y + 3) - \frac{4}{3y-1} \right] \cdot \frac{1}{6} \right\}^2 \cdot \frac{3y^2 - 4y + 1}{y^2 - 2y + 1}$	$\frac{y-1}{3y-1}$
314	$\frac{1}{(a-b)} \cdot \left[a + \left(1 - \frac{a}{b} \right) : \left(\frac{1}{b} + a \right) \right] : \left[\left(\frac{1}{a^2} + 1 \right) : \left(1 - \frac{b}{a} \right) \right] - \frac{1}{ab(ab+1)}$	$\frac{ab-1}{ab}$
315	$\left[\frac{1}{a+2b} - \frac{1}{a^2+4b^2+4ab} \cdot \left(a - \frac{12b^2-2a^2-2ab}{a-2b} \right) \right] : \left(\frac{6b-a}{a^2-4b^2} + \frac{1}{2b-a} \right)$	1
316	$\left(\frac{x}{y} + \frac{y}{x} \right) : \left(\frac{x}{y} + \frac{y}{x} - 2 \right) + \left(\frac{2x}{x-y} - \frac{3x^2-2xy+y^2}{x^2-xy} \right) : \left(\frac{x}{y} + \frac{y}{x} - 2 \right)$	$\frac{x^2+2y^2-xy}{(x-y)^2}$
317	$\left[\left(\frac{8x^2}{1+2x} - 2x \right) \cdot \left(2x + \frac{1-4x-8x^3}{4x^2-1} \right) : \left(\frac{2}{2x-1} + \frac{4}{2x+1} - 1 \right) \right] : \left(x - \frac{2x}{2x+1} \right)$	$\frac{12x-2}{4x^2-12x+1}$
318	$\left[\left(\frac{a+b}{a-b} \right)^2 \cdot \left(\frac{ab}{a+b} \right)^3 : \left(\frac{a+b}{a-b} \right)^3 \right] : \left(\frac{a^2-b^2}{a^2+b^2+ab} \cdot \frac{a^3-b^3}{a^2-b^2} : \frac{a+b}{b} \right)$	$\frac{a^3b^2}{(b+a)^3}$
319	$\frac{a-b}{(a^2+b^2+ab)^2} + \left(\frac{a+2b}{b-a} - \frac{5ab+b^2}{b^2-a^2} \right)^3 : \frac{a^6+b^6-2a^3b^3}{a^3+3a^2b+3ab^2+b^3}$	0
320	$\frac{3-x}{3x-1} \cdot \left[\left(\frac{x+1}{x^2-6x+9} - \frac{x-2}{x^2-9} \right) : \left(\frac{1}{x+3} + \frac{1}{x-3} \right) \right]$	$-\frac{3}{2x}$
321	$\left(1 - \frac{y^2-2y}{y^2-2y+1} \right) \cdot \left\{ \left[(2y-1)^3 - \frac{1}{2y-1} \right] : \frac{8y^2-8y}{2y-1} - y^2 \right\}$	1
322	$\left(\frac{2x+1}{x+1} : \frac{x}{x-1} - \frac{2x^2-1}{x^2-x} \right) : \left(\frac{4}{x-1} - \frac{3}{x+1} - \frac{1}{x} \right)$	$\frac{x-5x^2+2}{7x+1}$
323	$\frac{\frac{2}{x+y} - \frac{3}{x-y}}{\frac{x+5y}{x+y}} - \left(\frac{\frac{1}{x+y} - \frac{2}{x-y}}{\frac{x+3y}{x-y}} \right)$	$\frac{2y}{y^2-x^2}$

324	$\left(\frac{x}{y} + \frac{4y}{x} + 4\right) \cdot \left(\frac{\frac{x^3 - 2x^2y + 4xy^2}{x^3 - 8y^3}}{\frac{x^3 + 8y^3}{x^3 + 2x^2y + 4xy^2}}\right) \cdot \frac{y}{x}$	$\frac{x + 2y}{x - 2y}$
325	$\frac{\frac{1}{a+b} - \frac{b^2}{a^3 - ab^2} - \frac{b}{a^2 + ab}}{\frac{1}{a+b} + \frac{b}{a^2 - b^2}}$	$1 - \frac{2b}{a}$
326	$\left(\frac{\frac{2x^2 + 3xy}{3x^2 - 3xy - 6y^2} \cdot \left(\frac{x^2 - 2xy + y^2}{3x}\right)}{\frac{2x^2 + xy - 3y^2}{x^2 - xy - 2y^2}}\right)^2$	$\frac{x^2 + y^2 - 2xy}{81}$
327	$\frac{\left(\frac{1}{x^2 - 4} - \frac{2}{x^2 - 2x} + \frac{4}{3x^2 + 6x}\right) : \left(\frac{10}{x} - \frac{9}{x - 2}\right)}{\frac{1}{x + 2} + \frac{x - 4}{x^2 - 2x + 4}}$	$\frac{x^2 - 2x + 4}{6(x^2 - 2x - 2)}$
328	$1 - \frac{\left(\frac{2x^3 + x^2 - 2x - 1}{1 + x - 2x^2} + 3\right)^3 - 6x\left(x - \frac{1}{x}\right)}{\frac{x^3 + 12x - 14}{x^3 - 1}}$	x^3
329	$\frac{\frac{2}{x - 1} - \frac{3x^2}{2x^2 - 2} \left(1 - \frac{x}{x + 2}\right) + \frac{2 - x}{x + 1} : (2 - x)}{\frac{1}{x} \left(\frac{3}{x + 1} - \frac{6}{x + 2}\right) + \frac{2}{x^2 + x - 2}}$	$\frac{7x + 2}{5 - x}$
330	$\frac{\frac{4y}{x - y} - \frac{4y^2}{x^2 - y^2} + \frac{2x}{x + y}}{\left(2 - \frac{y}{x + y}\right) \cdot \frac{(2 + x - 2y) \cdot (x + y)}{2x^2 + xy}}$	$\frac{2x^2}{(x - 2y + 2)(x - y)}$
331	$\frac{\frac{1 + 4a^2}{4a}}{8a^2 + 16a^4 + 1} + \left(\frac{1 + \frac{1}{2a}}{\frac{1}{4a} + \frac{1}{2}}\right)^2 \cdot \frac{1}{12a} - \frac{a}{4a^2 + 1}$	$\frac{1}{3a}$

332	$\frac{x^n - 2}{x^n + 2} \cdot \left(\frac{2}{x^n + 2} + \frac{x^n}{x^n - 2} + \frac{8}{x^{2n} - 4} \right) \quad n \in \mathbb{N}$	1
333	$\left(\frac{a^n + b^n}{a^n - b^n} + \frac{a^n - b^n}{a^n + b^n} \right) \cdot \left(1 + \frac{a^{2n} + b^{2n}}{2a^n b^n} \right) : \frac{(a^{n+1} - ab^n)(a^{2n} + b^{2n})}{a^{n-1} b^n}$	$\frac{b^n + a^n}{a^2(b^n - a^n)^2}$