Frazioni algebriche

PASSED

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

11	$\frac{5a^2}{y^2+4}$	$\nexists y \in R$
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	$\frac{7a}{a^2+b^2}$	$a = 0 \quad \wedge \quad b = 0$
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	$\frac{x^2-4}{x^2-9x+8}$	$x=8 \quad \vee \quad x=1$
23	$\frac{7x^2-1}{x^2-9x+14}$	$x=2 \quad \vee \quad x=7$
24	$\frac{x+2}{a^2-2ax+x^2}$	$a=x$
25	$\frac{x^2+3}{x^2-9}$	$x=\pm 3$
26	$\frac{a^3+8}{a+8}$	$a=-8$
27	$\frac{a(a+7)}{a^2-6a-7}$	$a=-1 \quad \vee \quad a=7$

indica per quali valori le seguenti frazioni algebriche si annullano all'interno del C.E.

28	$\frac{2}{4x+10}$	$\nexists\, x \in R$
29	$\frac{3x}{9y}$	$x=0 \quad con \quad y \neq 0$
30	$\frac{11a}{7a+11}$	$a=0$

31	$\frac{11}{11a-7}$	$\nexists a \in R$
32	$\frac{2x-4}{10x-12}$	$x = 2$
33	$\frac{3a+3b-3c}{12}$	$a+b-c=0$
34	$\frac{5a+ab}{5c}$	$a=0 \quad \vee \quad b=-5$
35	$\frac{a+b}{a^2+b^2}$	$a=-b \quad con \quad b \neq 0$
36	$\frac{3m}{m^2+9m}$	$m=0 \ perde\ di\ significato$
37	$\frac{3x}{12a-3x}$	$x=0 \quad con \quad a \neq 0$
38	$\frac{5x}{15a-20b}$	$x=0$
39	$\frac{x^2-9}{3x-9}$	$x=-3$ $x-3 \ perde\ di\ significato$
40	$\frac{a^2+1}{a^2-1}$	$\nexists a \in R$

41	$\frac{x^3-1}{x^2+1}$	$x=1$
	determina le condizioni di esistenza delle seguenti frazioni algebriche	
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	$\frac{3x}{x^2+1}$	$\forall x \in R$
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	$\frac{x+3}{-x^2-4}$	$\forall x \in R$

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	$\frac{a^3-b^3}{a^3b^3}$	*non riducibile*
79	$\frac{2x^2-8}{x^3-x^2-4x+4}$	$\frac{2}{x-1}$
80	$\frac{1-a^2}{a+b-a^2-ab}$	$\frac{1+a}{a+b}$

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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	$\frac{16x^3 + 8x}{4x^2 + 1}$	*non riducibile*
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	$\frac{4a^2-4ab+b^2-1}{4a^2+b^2+1-4ab+4a-2b}$	$\frac{2a-b-1}{2a-b+1}$

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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	$\frac{9a^2+25b^2-30\,ab}{9a-15b}$	$\frac{3a-5b}{3}$
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	$\frac{4x^{2n}-12x^n+9}{4x^{2n}-9}$	$\frac{2x^n-3}{2x^n+3}$

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121	$\frac{a^{2n}-b^{2n}}{a^{2n}+2a^nb^n+b^{2n}}$	$\frac{a^n-b^n}{a^n+b^n}$
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	$x-\frac{1}{2x}+\frac{3}{x^2}$	$\frac{2x^3-x+6}{2x^2}$

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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	$\frac{a+2b}{2a}+\frac{a-b}{3a}-\frac{a+4b}{6a}$	$\frac{2}{3}$

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

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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	$-\frac{1}{x}+\frac{x^2+2y^2}{x^3+y^3}+\frac{x+2y}{x^2+y^2-xy}+\frac{y^2-4xy}{x^3+xy^2-x^2y}$	$\frac{1}{x+y}$

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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	$\frac{a^2-b^2}{a^2+b^2}\cdot\frac{a^4-b^4}{a+b}$	$(a+b)(a-b)^2$

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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 considera 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	$\left[\left(\frac{a}{b}-\frac{b}{a}\right)^3\cdot\left(\frac{1}{a-b}+\frac{1}{a+b}\right)\cdot\left(\frac{b}{a-b}+1\right)^2\right]^{-1}:\left(\frac{a}{a+b}-\frac{a}{b}\right)^2$	$\frac{b^5}{2a^4}$
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	$1-\dfrac{\left(\dfrac{2x^3+x^2-2x-1}{1+x-2x^2}+3\right)^3-6x\left(x-\dfrac{1}{x}\right)}{\dfrac{x^3+12x-14}{x^3-1}}$	x^3
329	$\dfrac{\dfrac{2}{x-1}-\dfrac{3x^2}{2x^2-2}\left(1-\dfrac{x}{x+2}\right)+\dfrac{2-x}{x+1}:(2-x)}{\dfrac{1}{x}\left(\dfrac{3}{x+1}-\dfrac{6}{x+2}\right)+\dfrac{2}{x^2+x-2}}$	$\dfrac{7x+2}{5-x}$
330	$\dfrac{\dfrac{4y}{x-y}-\dfrac{4y^2}{x^2-y^2}+\dfrac{2x}{x+y}}{\left(2-\dfrac{y}{x+y}\right)\cdot\dfrac{(2+x-2y)\cdot(x+y)}{2x^2+xy}}$	$\dfrac{2x^2}{(x-2y+2)(x-y)}$
331	$\dfrac{\dfrac{1+4a^2}{4a}}{\dfrac{8a^2+16a^4+1}{4a^2}}+\left(\dfrac{1+\dfrac{1}{2a}}{\dfrac{1}{4a}+\dfrac{1}{2}}\right)^2\cdot\dfrac{1}{12a}-\dfrac{a}{4a^2+1}$	$\dfrac{1}{3a}$
332	$\dfrac{x^n-2}{x^n+2}\cdot\left(\dfrac{2}{x^n+2}+\dfrac{x^n}{x^n-2}+\dfrac{8}{x^{2n}-4}\right)$ $n\in\mathbb{N}$	1
333	$\left(\dfrac{a^n+b^n}{a^n-b^n}+\dfrac{a^n-b^n}{a^n+b^n}\right)\cdot\left(1+\dfrac{a^{2n}+b^{2n}}{2a^nb^n}\right):\dfrac{(a^{n+1}-ab^n)(a^{2n}+b^{2n})}{a^{n-1}b^n}$	$\dfrac{b^n+a^n}{a^2(b^n-a^n)^2}$