

Calcolo del domino di una funzione

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Gli esercizi sono proposti in ordine di difficoltà crescente.

nota: in un file così lungo e complesso può accadere che sia presente un errore di diversa natura nonostante gli esercizi siano stati controllati più volte. Saremo grati di ricevere segnalazioni di eventuali refusi o suggerimenti di qualsiasi natura.

Nelle soluzioni degli esercizi goniometrici la lettera **k** rappresenta un numero intero cioè $k \in \mathbb{Z}$ tranne ove diversamente specificato

funzioni algebriche



1	$y = x$	\mathbb{R}
2	$y = 2x + 1$	\mathbb{R}
3	$y = x^3 - 2x^2 - 3x$	\mathbb{R}
4	$y = \frac{3x + 1}{2}$	\mathbb{R}
5	$y = 2x^8 + 52x^2 + 6$	\mathbb{R}
6	$y = \frac{1}{x}$	$x \neq 0$
7	$y = \frac{8x - 5}{x}$	$x \neq 0$
8	$y = \frac{3}{x - 1}$	$x \neq 1$
9	$y = \frac{x + 4}{x + 6}$	$x \neq -6$
10	$y = \frac{x + 4}{6}$	\mathbb{R}

11	$y = \frac{5}{2x + 3}$	$x \neq -\frac{3}{2}$
12	$y = \frac{x - 1}{x + 1}$	$x \neq -1$
13	$y = \frac{2x + 9}{x - 8}$	$x \neq 8$
14	$y = \frac{3x + 1}{3x - 1}$	$x \neq \frac{1}{3}$
15	$y = \frac{4x^2 + 1}{x - 20}$	$x \neq 20$
16	$y = \frac{4x^2 + 2x + 1}{x - 3}$	$x \neq 3$
17	$y = \sqrt{x}$	$x \geq 0$
18	$y = \sqrt{x - 1}$	$x \geq 1$
19	$y = \sqrt{x + 3}$	$x \geq -3$
20	$y = \sqrt{x - 8}$	$x \geq 8$

21	$y = \sqrt{x - 3}$	$x \geq 3$
22	$y = \sqrt{-5 + x}$	$x \geq 5$
23	$y = \sqrt{-2 - x}$	$x \leq -2$
24	$y = \sqrt{2x + 1}$	$x \geq -\frac{1}{2}$
25	$y = \sqrt{4x - 5}$	$x \geq \frac{5}{4}$
26	$y = \sqrt{x^2 - 1}$	$x \leq -1 \vee x \geq 1$
27	$y = \sqrt{x^2 + 1}$	R
28	$y = \sqrt[3]{x}$	R
29	$y = \sqrt[3]{4 - 2x}$	R
30	$y = \sqrt[3]{x^2 - 1}$	R

31	$y = \sqrt[3]{x^2 - 2x + 6}$	\mathbb{R}
32	$y = \frac{\sqrt{x} - 3}{x - 2}$	$0 \leq x < 2 \vee x > 2$
33	$y = \frac{3x^5 - 4x^4 + 3x^2 - 6}{x^2 + 5}$	\mathbb{R}
34	$y = \frac{3x^2 + 2}{2x - 3}$	$x \neq \frac{3}{2}$
35	$y = x^3 - \frac{x}{2} + 1$	\mathbb{R}
36	$y = \frac{x^2 + 5}{x^3}$	$x \neq 0$
37	$y = 3x^3 - 5x^2 + 1$	\mathbb{R}
38	$y = \frac{1}{x^2}$	$x \neq 0$
39	$y = \frac{1}{x^5}$	$x \neq 0$
40	$y = \frac{3x + 1}{2x - 1}$	$x \neq \frac{1}{2}$

41	$y = \frac{x^2 + x - 1}{x + 2}$	$x \neq -2$
42	$y = \frac{4 - 8x}{\sqrt{6 + x^2}}$	R
43	$y = \frac{x^2 - \sqrt{2}}{x^2 - 4}$	$x \neq \pm 2$
44	$y = \frac{2x - 1}{7 - x^2}$	$x \neq -\sqrt{7} \wedge x \neq +\sqrt{7}$
45	$y = x^3 - 2x^2 - 3x - 2$	R
46	$y = \frac{1 - x^2}{x^2 + x + 3}$	R
47	$y = \sqrt{x^2 - 2x - 2}$	$x \leq 1 - \sqrt{3} \vee x \geq 1 + \sqrt{3}$
48	$y = \sqrt[5]{\frac{x^2 - 1}{x^2 - 4x + 3}}$	$x \neq 1 \wedge x \neq 3$
49	$y = \frac{x^2 + 5}{x^2 + x - 6}$	$x \neq -3 \wedge x \neq 2$
50	$y = \frac{x + 9}{x^2 + 2x + 1}$	$x \neq -1$

51	$y = \frac{\sqrt{-1+x}}{x^2+x+1}$	$x \geq 1$
52	$y = \frac{x+3}{x^2-1}$	$x \neq -1 \wedge x \neq 1$
53	$y = \frac{3x-1}{x^2-5x+6}$	$x \neq 2 \wedge x \neq 3$
54	$y = \frac{8x-1}{\sqrt{x+2}}$	$x > -2$
55	$y = \frac{\sqrt{x-1}}{x+1}$	$x \geq 1$
56	$y = \frac{x^2-5x}{\sqrt[3]{4-x}}$	$x \neq 4$
57	$y = \sqrt[3]{\frac{x+2}{x-6}}$	$x \neq 6$
58	$y = \frac{\sqrt[3]{x-1}}{2x+5}$	$x \neq -\frac{5}{2}$
59	$y = \sqrt{x-3} + \sqrt[3]{x+1}$	$x \geq 3$
60	$y = \sqrt[5]{x^3+4x^2-2} \cdot \sqrt{x}$	$x \geq 0$

61	$y = \sqrt{4 - x^2}$	$-2 \leq x \leq 2$
62	$y = \sqrt{\frac{2 + x^2}{x}}$	$x > 0$
63	$y = \sqrt{\frac{x + 1}{x - 1}}$	$x \leq -1 \vee x > 1$
64	$y = \sqrt{\frac{1 + x^2}{-3}}$	\emptyset
65	$y = \frac{x^2 - x + 1}{x^2 - 7x + 12}$	$x \neq 3 \wedge x \neq 4$
66	$y = \sqrt{1 + x^2}$	R
67	$y = \frac{x - 4}{ x + 5 }$	$x \neq -5$
68	$y = \frac{x + 5}{x^4 + 2}$	R
69	$y = \frac{x}{ x - 5 }$	$x \neq 5$
70	$y = \sqrt[9]{\frac{5 - x}{ x - 1 }}$	$x \neq 1$

71	$y = \frac{(x^2 - 1) \sqrt[3]{x^5 - 2}}{x \sqrt[4]{2 - x}}$	$x < 2 \wedge x \neq 0$
72	$y = \sqrt{x + 1} + \sqrt{x^2 - 5}$	$x \geq \sqrt{5}$
73	$y = \sqrt{1 - x^2}$	$-1 \leq x \leq 1$
74	$y = \frac{x\sqrt{x - 3}}{x^2 - 16}$	$3 \leq x < 4 \vee x > 4$
75	$y = \sqrt{\frac{x - 1}{x(x + 1)}}$	$-1 < x < 0 \vee x \geq 1$
76	$y = \sqrt{x^2 - 4}$	$x \leq -2 \vee x \geq 2$
77	$y = \frac{1}{\sqrt{x^2 + 1}}$	R
78	$y = \sqrt{9 - x^2} + \frac{5}{x}$	$-3 \leq x < 0 \vee 0 < x \leq 3$
79	$y = \frac{1}{\sqrt{x^2 - 3x}}$	$x < 0 \vee x > 3$
80	$y = \sqrt{ x }$	R

81	$y = \frac{x^2 - 5x + 6}{x^2 - 3x + 10}$	\mathbb{R}
82	$y = \frac{2x^2 - x + 3}{-3x^2 + 16x - 5}$	$x \neq \frac{1}{3} \wedge x \neq 5$
83	$y = \frac{3x^2 + 5x - 2}{3x^2 - x - 14}$	$x \neq -2 \wedge x \neq \frac{7}{3}$
84	$y = \frac{x^3 - 1}{x^2 + x - 2}$	$x \neq -2 \wedge x \neq 1$
85	$y = \frac{x^2 - 3x}{x^3 - 8}$	$x \neq 2$
86	$y = \frac{\sqrt[3]{x - \frac{1}{2}}}{x}$	$x \neq 0$
87	$y = x^2 + x - 9 $	\mathbb{R}
88	$y = \sqrt{x^2 - 6x}$	$x \leq 0 \vee x \geq 6$
89	$y = \sqrt[4]{x^2 + 5}$	\mathbb{R}
90	$y = \sqrt[5]{\frac{x}{x^3 - 1}}$	$x \neq 1$

91	$y = \sqrt[3]{\frac{3x-6}{3- x }} + \frac{6x}{\sqrt[5]{x-2}}$	$x \neq -3 \wedge x \neq 2 \wedge x \neq 3$
92	$y = \frac{4x^2}{\sqrt{4-x}} - \frac{2x}{\sqrt{2x-3}}$	$\frac{3}{2} < x < 4$
93	$y = \frac{x+1}{\sqrt{x^2-6x+9}}$	$x \neq 3$
94	$y = \frac{5x^4-3x+3}{\sqrt[7]{2-x}} - \frac{x^2-2x+1}{\sqrt{x^2-6x+9}}$	$x \neq 2 \wedge x \neq 3$
95	$y = \frac{\sqrt[3]{2-x}}{\sqrt[4]{x^4-81}}$	$x \leq -3 \vee x \geq 3$
96	$y = \sqrt{x-3 x }$	0
97	$y = \frac{x^2-3}{e- x^2-1 }$	$x \neq \pm\sqrt{1+e}$
98	$y = \frac{3x^2-2}{ x+1 -5}$	$x \neq -6 \wedge x \neq 4$
99	$y = \frac{\sqrt{x^2+3}}{ x^2-1 +3x}$	$x \neq \frac{-3-\sqrt{13}}{2} \wedge x \neq \frac{3-\sqrt{13}}{2}$

100	$y = \sqrt{8 - x^2} + \sqrt{x - 1} + \sqrt{x}$	$1 \leq x \leq 2\sqrt{2}$
101	$y = \sqrt{ 5 - 2x - 4 - x}$	$x \leq \frac{1}{3} \vee x \geq 9$
102	$y = \frac{x - 7}{x^2 - 2 x - 3}$	$x \neq -3 \wedge x \neq 3$
103	$y = \sqrt{\frac{2x + 3}{x - 1}}$	$x \leq -\frac{3}{2} \vee x > 1$
104	$y = \sqrt{\sqrt{x - 1} - x + 3}$	$1 \leq x \leq 5$
105	$y = \sqrt{2x - 1 + x + 1 }$	$x \geq 0$
106	$y = \frac{3x + 1}{x^3 - x}$	$x \neq -1 \wedge x \neq 0 \wedge x \neq 1$
107	$y = \frac{1}{\sqrt{ x - 1 }}$	$x \neq 1$
108	$y = \sqrt{ x - x^2}$	$-1 \leq x \leq 1$
109	$y = \frac{2}{x - 1} - \frac{1}{x} - \frac{1}{x^2 - x}$	$x \neq 0 \wedge x \neq 1$

110	$y = \frac{3x}{2 x - 1}$	$x \neq -\frac{1}{2} \wedge x \neq \frac{1}{2}$
111	$y = \sqrt{x^2 - 1} + \sqrt{x - 5}$	$x \geq 5$
112	$y = \frac{x + \sqrt{x + 1}}{\sqrt{x - 2}}$	$x > 2$
113	$y = \frac{\sqrt{x^2 + 3} - \sqrt{x + 7}}{x^2 - 4x + 4}$	$-7 \leq x < 2 \vee x > 2$
114	$y = \frac{x - 1}{ x - 3 + x + 1 }$	R
115	$y = \frac{3 + x}{ x + 2 + x^2 - x - 6 }$	$x \neq -2$
116	$y = \frac{ x + 5 }{ x - 1 - x - 2 }$	$x \neq \frac{3}{2}$
117	$y = \sqrt[4]{\frac{x - x^2}{x^2 + 3}}$	$0 \leq x \leq 1$
118	$y = \sqrt{x^3 - 3x} + \sqrt[3]{x^2 - 3x - 4}$	$-\sqrt{3} \leq x \leq 0 \vee x \geq \sqrt{3}$
119	$y = \frac{3x^2 + 5x - 2}{\sqrt{x + 5} - 4}$	$-5 \leq x < 11 \vee x > 11$

120	$y = \frac{2x + x^2}{\sqrt{x^2 - 8}} + \sqrt{6 - x^2}$	\emptyset
121	$y = \sqrt{\frac{x^3(x-1)^2}{x+3}}$	$x < -3 \vee x \geq 0$
122	$y = \sqrt[20]{1 - 4 - 3x }$	$1 \leq x \leq \frac{5}{3}$
123	$y = \frac{x^2 - 2x + 1}{6x - x^2 - 4 }$	$x \neq \pm 3 + \sqrt{13}$
124	$y = \frac{\sqrt{2 + x^2}}{\sqrt[11]{-3x - \sqrt{1 + x^2}}}$	$x \neq -\frac{\sqrt{2}}{4}$
125	$y = \frac{2 - \sqrt[3]{3 x - x + 1}}{\sqrt{4 - x }}$	$-4 < x < 4$
126	$y = \frac{\sqrt{1 - \frac{e^2}{x}}}{\sqrt[5]{x^2 - 9}}$	$x < 0 \vee x > e^2 \wedge x \neq -3$
127	$y = \sqrt{\frac{3x - x + 4 - 1}{6 - 1 - x^2 }}$	$x < -\sqrt{7} \vee \frac{5}{2} \leq x < \sqrt{7}$
128	$y = \frac{\sqrt{x + 3}}{\sqrt{ x + 1 - 2}} + 1$	$x > 1$
129	$y = \frac{1}{\sqrt{ x }} + \frac{1}{ x^2 - 1 } + \sqrt{2 - x}$	$x < 2 \wedge x \neq 0 \wedge x \neq \pm 1$

130	$y = \frac{\sqrt{16 - x^2}}{x^2 - 6x + 9} + \frac{x}{\sqrt{x^2 - 16}}$	\emptyset
131	$y = \sqrt{1 - \sqrt{x}} + \sqrt[3]{x + 1}$	$0 \leq x \leq 1$
132	$y = \frac{\sqrt{4x - 6}}{\sqrt[3]{x^2(x - 8)}} + \sqrt[3]{\frac{1}{4 - x }}$	$x \geq \frac{3}{2} \wedge x \neq 4 \wedge x \neq 8$
133	$y = \sqrt{2x - \sqrt{3 - 4x}}$	$\frac{1}{2} < x \leq \frac{3}{4}$
134	$y = \frac{3 - x^2}{\sqrt[6]{2x - 1 - 4x }}$	$\frac{1}{6} < x < \frac{1}{2}$
135	$y = \frac{3x^3 + 1}{ 3x - 1 + 2} + \frac{2 - x }{\sqrt{4x - 1}}$	$x > \frac{1}{4}$
136	$y = \sqrt[4]{x - 2 + 23 x + 1 - 2x - 1 }$	$x \leq -\frac{13}{10} \vee x \geq -\frac{10}{13}$
137	$y = \sqrt{\frac{ -2x - 1 - 3}{x^2 + 2x - 1}}$	$x < -\sqrt{2} - 1 \vee 2 \leq x < \sqrt{2} - 1 \vee x \geq 1$
138	$y = \sqrt{\sqrt{3 - x^2} - \sqrt{2 - x}}$	$\frac{1 - \sqrt{5}}{2} \leq x \leq \frac{1 + \sqrt{5}}{2}$

funzioni logaritmiche ed esponenziali



139	$y = \log_2 x$	$x > 0$
140	$y = \log_3 x - 1$	$x > 0$
141	$y = \log_3(x - 1)$	$x > 1$
142	$y = \ln(5 + x)$	$x > -5$
143	$y = \log_{\frac{3}{4}}(5 - 2x)$	$x < \frac{5}{2}$
144	$y = \log_3 x$	\mathbb{R}
145	$y = \log(x - 3)$	$x > 3$
146	$y = \log_{\frac{2}{3}}(1 - x)$	$x < 1$
147	$y = \log_2(5 - x) + 1$	$x < 5$
148	$y = x^2 - 2x - \log x + 5$	$x > 0$
149	$y = \ln x^2$	$x \neq 0$

150	$y = \ln x^3$	$x > 0$
151	$y = \log \frac{2}{x}$	$x > 0$
152	$y = \ln \frac{5-x}{6+x}$	$-6 < x < 5$
153	$y = \log \frac{x-2}{x-3}$	$x < 2 \vee x > 3$
154	$y = \log_{\frac{1}{2}} \frac{x-3}{1-x}$	$1 < x < 3$
155	$y = \sqrt{\log_2 x}$	$x > 0$
156	$y = \log_{\frac{1}{2}} \sqrt[3]{x-2}$	$x > 2$
157	$y = 2^x$	\mathbb{R}
158	$y = 2^{x-1}$	\mathbb{R}
159	$y = 2^x - 1$	\mathbb{R}
160	$y = e^x$	\mathbb{R}
161	$y = e^{x^2+x-1}$	\mathbb{R}

162	$y = e^{x-1}$	R
163	$y = e^{\pi}$	R
164	$y = e^{5-x}$	R
165	$y = 5^{\frac{3}{x}}$	$x \neq 0$
166	$y = 5^{\frac{x}{3}}$	R
167	$y = \left(\frac{1}{2}\right)^{5x+\sqrt{3}}$	R
168	$y = 5^{\frac{x^2-1}{x-8}}$	$x \neq 8$
169	$y = 8^{\frac{5}{x-2}}$	$x \neq 2$
170	$y = 3^{\frac{x-1}{5-x}}$	$x \neq 5$
171	$y = e^{\frac{x+3}{x-1}}$	$x \neq 1$
172	$y = \left(\frac{1}{5}\right)^{\sqrt{x-2}}$	$x \geq 2$
173	$y = 3^{\sqrt{2x-1}}$	$x \geq \frac{1}{2}$

174	$y = \sqrt{e^{x-1}}$	\mathbb{R}
175	$y = \log \frac{x^2 + 5}{3}$	\mathbb{R}
176	$y = \pi^x$	\mathbb{R}
177	$y = \log_{\frac{1}{2}} \sqrt{x-8}$	$x > 8$
178	$y = (-2)^x$	\emptyset
179	$y = \log_{-2} x$	\emptyset
180	$y = 5^{\frac{5x^2-1}{5x-1}}$	$x \neq \frac{1}{5}$
181	$y = \sqrt{2^{2x} - 2^x}$	$x \geq 0$
182	$y = e^{\frac{x+3}{x-1}}$	$x \neq 1$
183	$y = \frac{3^{2x} + 5^{\frac{3x}{x-1}}}{x + \frac{1}{2}}$	$x \neq -\frac{1}{2} \wedge x \neq 1$


184	$y = \sqrt{\ln(x+1)}$	$x \geq 0$
185	$y = e^{\frac{x-5}{ 1+x }} + 5$	$x \neq -1$
186	$y = 6x^2 - ex - 3 \log_4(e^x - e^{\sqrt{3}})$	$x > \sqrt{3}$
187	$y = 3x - \frac{2 - \ln(x-1)}{4 + \ln^2 x}$	$x > 1$
188	$y = x-5 e^{\frac{5x}{2-x}}$	$x \neq 2$
189	$y = x+6 \ln x^2-5 $	$x \neq -\sqrt{5} \wedge x \neq \sqrt{5}$
190	$y = \frac{\sqrt{3^{4x} + 7 \cdot 3^{2x} + 10}}{\frac{3x-e}{7^{\frac{x}{x}}}}$	$x \neq 0$
191	$y = x^\pi$	$x \geq 0$
192	$y = (\sqrt[3]{3})^{\ln x}$	$x > 0$
193	$y = \frac{3^{2x} + 3^x - 1}{\ln \frac{x+1}{x}}$	$x < -1 \vee x > 0$
194	$y = 2^{\frac{\sqrt{x^2-e^2}}{x+1}}$	$x < -e \vee x > e$

195	$y = 3x - e^{\frac{1}{1-\ln x}}$	$x > 0 \wedge x \neq e$
196	$y = e^{\frac{3}{\ln x - 2}}$	$x > 0 \wedge x \neq e^2$
197	$y = \log_{\frac{1}{2}} \frac{2-x}{9-x^2}$	$-3 < x < 2 \vee x > 3$
198	$y = \log_2 \frac{x+5}{1-x^2}$	$x < -5 \vee -1 < x < 1$
199	$y = 5^{\frac{x}{2-x^2}}$	$x \neq -\sqrt{2} \wedge x \neq \sqrt{2}$
200	$y = 2^{\frac{x+1}{x^2-4}}$	$x \neq -2 \wedge x \neq 2$
201	$y = e^{\frac{\sqrt{x^2-7x+12}}{x-5}}$	$x < 3 \vee 4 \leq x < 5 \vee x > 5$
202	$y = \left(\frac{3}{4}\right)^{\sqrt{2-x^2}}$	$-\sqrt{2} \leq x \leq \sqrt{2}$
203	$y = \sqrt{\left(\frac{1}{2}\right)^{\frac{x-3}{x+5}} - \frac{1}{8}}$	$x \leq -9 \vee x > -5$

204	$y = \frac{\frac{1}{3^{x+1}} - 5^x}{\left(\frac{1}{4}\right)^{x^2} - 1}$	$x \neq -1 \wedge x \neq 0$
205	$y = \log_7(e^{2x} - 5e^x + 6) + \log_7 x - 2 $	$x < \ln 2 \vee \ln 3 < x < 2 \vee x > 2$
206	$y = \frac{\log_2(x + 1) + 2^{\frac{x}{x-1}}}{2^{\sqrt{x}}}$	$0 \leq x < 1 \vee x > 1$
207	$y = 2 \cdot 3^x \ln(2x - \sqrt[3]{x}) - 3$	$x < -\frac{\sqrt{2}}{4} \vee x > \frac{\sqrt{2}}{4}$
208	$y = \frac{3^x + \ln x - 1}{\ln^2 x - 7 \ln x + 10}$	$x > 0 \wedge x \neq e^2 \wedge x \neq e^5$
209	$y = \ln \ln(x - 2)$	$x > 3$
210	$y = \ln \frac{x^2 - 9}{x - 2} + e^{\sqrt{x^4 - 16}}$	$-3 < x \leq -2 \vee x > 3$
211	$y = 3^{\frac{x}{5 - \sqrt{x - x^2}}}$	$0 \leq x \leq 1$
212	$y = \sqrt{9 \cdot 3^{2x} - 82 \cdot 3^x + 9}$	$x \leq -2 \vee x \geq 2$

213	$y = e^x \log_{\frac{1}{3}}(3-x) + \log_5(1-x^2) + \log_5 x$	$0 < x < 1$
214	$y = \sqrt{\frac{\ln(2^x - 1)}{3^x - 1}}$	$x \geq 1$
215	$y = \sqrt[4]{\log_{\frac{1}{2}}(x^2 - 4) - \log_{\frac{1}{2}}(x - 1)}$	$2 < x \leq \frac{1 + \sqrt{13}}{2}$
216	$y = \frac{x^2 + 2x - 3}{\ln^2(2x - 3) - 1}$	$x > \frac{3}{2} \wedge x \neq \frac{3+e}{2} \wedge x \neq \frac{1+3e}{2}$
217	$y = \frac{\ln x - 5}{\ln^2 x^2 - 1}$	$x > 0 \wedge x \neq \sqrt{e^{-1}} \wedge x \neq \sqrt{e}$
218	$y = \frac{1 - 3x^2}{\ln(5x^2 - 12)}$	$x < -\frac{2\sqrt{15}}{2} \vee x > \frac{2\sqrt{15}}{2} \wedge x \neq \pm \frac{\sqrt{65}}{5}$
219	$y = (e^{2x} - 5e^x + 6)^{x^2 - 3x}$	$x < \ln 2 \vee x > \ln 3$
220	$y = \frac{3 + \log_4(x^2 + 1)}{\log_x 5}$	$0 < x < 1 \vee x > 1$
221	$y = \sqrt{\log_{\frac{1}{3}}(x^2 - 3x - 1)}$	$\frac{3 - \sqrt{17}}{2} \leq x < \frac{3 - \sqrt{13}}{2} \vee$ $\frac{3 + \sqrt{13}}{2} < x \leq \frac{3 + \sqrt{17}}{2}$
222	$y = \sqrt{\ln x^2 - 9 }$	$x < -\sqrt{10} \vee -2\sqrt{2} \leq x \leq 2\sqrt{2} \vee$ $x > \sqrt{10}$

223	$y = \log_3 \log_{\frac{1}{4}}(5x - 3)$	$\frac{3}{5} < x < \frac{4}{5}$
224	$y = \ln \ln(x^2 - 3)$	$x < -2 \vee x > 2$
225	$y = \frac{\ln(2 - x - 3)}{\sqrt{\log_2 x - 2}}$	$4 < x < 5$
226	$y = \left(\frac{3x - 4}{4x - 1}\right)^{\frac{x-1}{x-3}}$	$x < \frac{1}{4} \vee \frac{4}{3} < x < 3 \vee x > 3$
227	$y = \frac{2^x + 5}{\sqrt{\log_3(x - 2x^2) + 2}}$	$\frac{1}{6} < x < \frac{1}{3}$
228	$y = \frac{\sqrt[3]{2x^2 - x + 5}}{\sqrt{\ln x }}$	$x < -1 \vee x > 1$
229	$y = \frac{e^{-x^2+3x}}{\ln(x^2 - 2 + 3x)}$	$x < -\frac{\sqrt{17} + 3}{2} \vee x > \frac{3 - \sqrt{17}}{2} \wedge$ $x \neq -\frac{\sqrt{21} + 3}{2} \wedge x \neq \frac{3 - \sqrt{13}}{2}$
230	$y = \frac{2^{2x} - 6}{\ln x^2 - 8 }$	$x \neq \pm 2\sqrt{2} \wedge x \neq \pm 3 \wedge x \neq \pm\sqrt{7}$
231	$y = \frac{\ln \sqrt{\frac{x(x-1)}{x+5}}}{\frac{3x}{e^{x+1}} - 2}$	$-5 < x < -1 \vee -1 < x < 0 \vee x > 1$

232	$y = \sqrt[3]{\frac{x(x+2)}{2^{2-x}} - 1}$	$x < -1 \vee x > 1 \wedge x \neq \pm 2$
233	$y = \left(\log_{\frac{2}{3}}(x-3)\right)^{\frac{x+2}{x}}$	$3 < x < 4$
funzioni goniometriche 		
234	$y = \sin x$	\mathbb{R}
235	$y = \cos x$	\mathbb{R}
236	$y = \tan x$	$x \neq \frac{\pi}{2} + k\pi$
237	$y = \cot x$	$x \neq k\pi$
238	$y = \sin x + 6$	\mathbb{R}
239	$y = \cos x - 9$	\mathbb{R}
240	$y = 6x^2 - \tan x$	$x \neq \frac{\pi}{2} + k\pi$
241	$y = 2\sin x \cos x + 8$	\mathbb{R}
242	$y = -8 \tan x - 2 \cos x + x^2$	$x \neq \frac{\pi}{2} + k\pi$
243	$y = \frac{2}{\sin x}$	$x \neq k\pi$

244	$y = \sqrt[3]{6 + \cos x}$	\mathbb{R}
245	$y = \frac{2 + x^2 - 4x}{\sin x}$	$x \neq k\pi$
246	$y = 4 \sin x - 3 \cos 3x$	\mathbb{R}
247	$y = \sin\left(x^2 - \frac{\pi}{6}\right)$	\mathbb{R}
248	$y = \sec x$	$x \neq \frac{\pi}{2} + k\pi$
249	$y = \csc x$	$x \neq k\pi$
250	$y = \arcsin x$	$-1 \leq x \leq 1$
251	$y = \arccos x$	$-1 \leq x \leq 1$
252	$y = \arctan x$	\mathbb{R}
253	$y = \operatorname{arccot} x$	\mathbb{R}
254	$y = \arcsin 2x$	$-\frac{1}{2} \leq x \leq \frac{1}{2}$
255	$y = \arccos \frac{x}{3}$	$-3 \leq x \leq 3$
256	$y = \arctan(2x + 1)$	\mathbb{R}
257	$y = \operatorname{arccot}(5x - 2)$	\mathbb{R}


258	$y = \sqrt{x} + \arccos x$	$0 \leq x \leq 1$
259	$y = \frac{\arctan x + \sin x}{2 + x}$	$x \neq -2$
260	$y = \sec 3x$	$x \neq \frac{\pi}{6} + k\frac{\pi}{3}$
261	$y = \arccos \frac{x+1}{x-2}$	$x \leq \frac{1}{2}$
262	$y = 3 \frac{1}{\cos x}$	$x \neq \frac{\pi}{2} + k\pi$
263	$y = \frac{3x-1}{\sin x}$	$x \neq k\pi$
264	$y = \ln(\sin x - 1)$	\emptyset
265	$y = \frac{2 - \cos^4 x}{\sin^2 x + 2}$	\mathbb{R}
266	$y = \frac{\sin 3x + 2}{\cos 2x - 1}$	$x \neq k\pi$
267	$y = \sin x \cos x$	\mathbb{R}
268	$y = \sin \cos \ln x$	$x > 0$
269	$y = \log_{10} \tan x$	$\frac{\pi}{4} + k\pi < x < \frac{\pi}{2} + k\pi$
270	$y = \sqrt{-\cos 2x}$	$\frac{\pi}{4} + k\pi \leq x \leq \frac{3}{4}\pi + k\pi$

271	$y = \sqrt[6]{\cos x}$	$-\frac{\pi}{2} + 2k\pi < x < \frac{\pi}{2} + 2k\pi$
272	$y = \arctan \left \frac{2-5x}{3-x} \right $	$x \neq 3$
273	$y = \frac{1 + \tan x}{\sqrt{\cos^2 x - 1}}$	\emptyset
274	$y = \frac{\arcsin x - \pi}{x^2 - 1}$	$-1 < x < 1$
275	$y = \operatorname{arccot} \sqrt{x^2 - 9}$	$x \leq -3 \vee x \geq 3$
276	$y = \sqrt{\arcsin(x-2)}$	$2 \leq x \leq 3$
277	$y = \frac{2 \cos x - 1}{\sin x + 1}$	$x \neq \frac{3}{2}\pi + 2k\pi$
278	$y = \log_2(-\sin 3x)$	$\frac{\pi}{3} + \frac{2}{3}k\pi < x < \frac{2}{3}\pi + \frac{2}{3}k\pi$
279	$y = \ln \sin \left(x - \frac{\pi}{2} \right)$	$\frac{\pi}{2} + 2k\pi < x < \frac{3}{2}\pi + 2k\pi$
280	$y = \ln \arctan x$	$x > 0$
281	$y = \frac{\cos x}{ 1 - \cos x }$	$x \neq 2k\pi$
282	$y = \frac{(x-1) \cos x}{\cos^6 x + \sin^2 x}$	R
283	$y = \arcsin \cos x$	R
284	$y = (x-1) \arctan \frac{x-1}{x+3}$	$x \neq -3$

285	$y = 5x + \arctan \frac{2x - 3}{3x + 5}$	$x \neq -\frac{5}{3}$
286	$y = \arctan(\ln(x + 1)^2)$	$x \neq -1$
287	$y = \sin\left(\frac{3}{2}x\right) + \ln \cos(2x)$	$-\frac{\pi}{4} + k\pi < x < \frac{\pi}{4} + k\pi$
288	$y = \log_7(\cot x - \sqrt{3})$	$k\pi < x < \frac{\pi}{6} + k\pi$
289	$y = 2\sqrt{\left \frac{\sin x}{1 - 2\cos x}\right }$	$x \neq \pm \frac{\pi}{3} + 2k\pi$
290	$y = \sqrt{\frac{1 - \cos x}{1 - \sin x}}$	$x \neq \frac{\pi}{2} + 2k\pi$
291	$y = \frac{5 - 2\cos \frac{x}{2}}{\sin\left(\frac{x}{2}\right) + \frac{\sqrt{3}}{2}}$	$x \neq -\frac{2}{3}\pi + 4k\pi \wedge x \neq \frac{8}{3}\pi + 4k\pi$
292	$y = 2 - \frac{\cos x - \sqrt{3}}{\tan x + 1}$	$x \neq -\frac{\pi}{4} + k\pi \wedge x \neq \frac{\pi}{2} + k\pi$
293	$y = \tan \frac{x}{3} - \frac{2 + x}{2 \cot x}$	$x \neq \frac{3\pi}{2} + 3k\pi \wedge x \neq \frac{\pi}{2} + k\pi$

294	$y = \frac{\tan x \cos x}{1 - \sin x \cot x}$	$x \neq 2k\pi$
295	$y = \frac{2}{\sqrt{\cos \frac{x}{2} - \frac{1}{2}}}$	$-\frac{2\pi}{3} + 4k\pi < x < \frac{2\pi}{3} + 4k\pi$
296	$y = \ln\left(1 - 2\cos \frac{x}{2}\right)$	$\frac{2}{3}\pi + 4k\pi < x \leq \frac{10}{3}\pi + 4k\pi$
297	$y = \arcsin(1 - \sqrt{x+3})$	$-3 \leq x \leq 1$
298	$y = \frac{2\cos x + 3\sin x}{5\arctan(2\ln x)}$	$x > 0 \wedge x \neq 1$
299	$y = \csc x + \arcsin x$	$-1 \leq x \leq 1 \wedge x \neq 0$
300	$y = \tan(x-3) + \sqrt{\ln(x^2+1)}$	$x \neq \frac{\pi}{2} + 3 + k\pi$
301	$y = \arcsin(9 - x^2)$	$-\sqrt{10} \leq x \leq -2\sqrt{2} \vee 2\sqrt{2} \leq x \leq \sqrt{10}$
302	$y = \arcsin \frac{3 \ln x + 1}{\ln x - 1}$	$\frac{1}{e} \leq x \leq 1$
303	$y = \log_2 \arccos \ln x$	$\frac{1}{e} \leq x < e$

304	$y = \arcsin \ln x - \ln \arcsin x$	$\frac{1}{e} \leq x \leq 1$
305	$y = \sqrt{\sin x + \cos x}$	$-\frac{\pi}{4} + 2k\pi \leq x \leq \frac{3}{4}\pi + 2k\pi$
306	$y = \sqrt{\frac{2 \sin x - 1}{\cot x}}$	$\frac{\pi}{6} + 2k\pi \leq x < \frac{\pi}{2} + 2k\pi \vee$ $\frac{5}{6}\pi + 2k\pi \leq x < (2k + 1)\pi \vee$ $+2k\pi < x < 2(k + 1)\pi$
307	$y = \arcsin \frac{3}{x^2 - 4}$	$x \leq -\sqrt{7} \vee -1 \leq x \leq 1 \vee x \geq \sqrt{7}$
308	$y = \frac{3 \sin x + \cos x}{\sqrt[4]{ \tan x - \sqrt{3} }}$	$x \neq \frac{\pi}{3} + k\pi \wedge x \neq \frac{\pi}{2} + k\pi$
309	$y = \arccos \frac{1}{\tan x}$	$\frac{\pi}{4} + k\pi \leq x \leq \frac{3}{4}\pi + k\pi$
310	$y = \sqrt{\frac{\cos x}{1 - \cos 2x}}$	$2k\pi < x \leq \frac{\pi}{2} + 2k\pi \vee$ $\frac{3}{2}\pi + 2k\pi \leq x < 2\pi + 2k\pi$
311	$y = \log_3 \arcsin(e^x - 2)$	$\ln 2 < x \leq \ln 3$
312	$y = \frac{\cos x}{\ln \cos x }$	$x \neq \frac{\pi}{2} k$
313	$y = \log_3(\tan x + 3 \cot x - 4)$	$k\pi < x < \frac{\pi}{4} + k\pi \vee$ $\arctg 3 < x < \frac{\pi}{2} + k\pi$

314	$y = \operatorname{arccot}(3x - 2\sqrt[4]{5 - 7x})$	$x \leq \frac{5}{7}$
315	$y = \frac{1 - 2 \sin^2 x}{1 - 2 \cos x}$	$x \neq \frac{\pi}{3} + 2k\pi \wedge x \neq \frac{5}{3}\pi + 2k\pi$
316	$y = \operatorname{arcsin}\sqrt{x - 2x^2}$	$0 \leq x \leq \frac{1}{2}$
317	$y = \sqrt{\sqrt{3}\sin^2 x - \sin x \cos x}$	$\frac{\pi}{6} + k\pi \leq x \leq (k+1)\pi$
318	$y = \frac{3 - \tan x}{\sin 2x - \cos x}$	$x \neq \frac{5\pi}{6} + 2k\pi \wedge x \neq \frac{\pi}{6} + 2k\pi \wedge x \neq \frac{\pi}{2} + k\pi$
319	$y = \cot \frac{x}{2} \left(1 - \frac{\tan^2 x}{\sqrt{1 - \tan x}} \right)$	$-\frac{\pi}{2} + k\pi < x < \frac{\pi}{4} + k\pi \wedge x \neq k\pi$
320	$y = \sqrt[4]{\frac{\sin x \cos x - 1}{\sqrt{3} - \cot x}}$	$k\pi < x < \frac{\pi}{6} + k\pi$
esercizi di riepilogo 		
321	$y = \ln \sqrt{x}$	$x > 0$
322	$y = \sqrt[3]{\cos x}$	$-\frac{\pi}{2} + k\pi < x < \frac{\pi}{2} + k\pi$
323	$y = \log_{\frac{1}{2}} \sqrt{x - 1}$	$x > 1$

324	$y = \sqrt{\log_2 x}$	$x \geq 1$
325	$y = \frac{2x^3 - 5x^2 + 1}{\sqrt{x}}$	$x > 0$
326	$y = \sin \sqrt[3]{x^2 - 2}$	\mathbb{R}
327	$y = \frac{5x^4 - 6x^2 + 2}{x^2 - 12x + 36}$	$x \neq 6$
328	$y = \sqrt{\cos x}$	\mathbb{R}
329	$y = 5^{-x}$	\mathbb{R}
330	$y = 5^{-\sqrt[3]{x-2}}$	\mathbb{R}
331	$y = 2^{\frac{\sin x}{1-x}}$	$x \neq 1$
332	$y = \left(\frac{1}{5}\right)^{\frac{2 \cos x + 2}{5 \sin x}}$	$x \neq k\pi$
333	$y = \frac{\sqrt{\cos x}}{x}$	$-\frac{\pi}{2} + k\pi < x < \frac{\pi}{2} + k\pi \wedge x \neq 0$
334	$y = \sqrt[11]{\frac{x^2 + 2x - 1}{x^2 - 3x - 18}}$	$x \neq -3 \wedge x \neq 6$

335	$y = \frac{\sqrt{x^2 + 1}}{\sqrt[3]{x^2 - 1}}$	$x \neq \pm 1$
336	$y = \sqrt[3]{2xe^x - 2x}$	\mathbb{R}
337	$y = \sqrt{5 - \log_3(x + 1)}$	$-1 < x \leq 242$
338	$y = 1 - e^{\frac{\sin x}{\cos^2 x - 1}}$	$x \neq k\pi$
339	$y = \sqrt{\arcsin \frac{2x^2}{x + 1}}$	$-\frac{1}{2} \leq x \leq 1$
340	$y = \ln \arctan x$	$x > 0$
341	$y = x^{2^x + 3}$	$x > 0$
342	$y = \ln \left(\frac{4^x - 2^x}{5^x + 3} \right)$	$x > 0$
343	$y = \left(\frac{1}{5} \right)^{\arccos \ln x}$	$\frac{1}{e} \leq x \leq e$
344	$y = \ln(x)^{\frac{\ln x}{x}}$	$x > 1$
345	$y = \arctan \arccos \sin \frac{1}{x}$	$x \neq 0$

346	$y = \sin \ln \cos x$	$-\frac{\pi}{2} + 2k\pi < x < \frac{\pi}{2} + 2k\pi$
347	$y = \sqrt[4]{\frac{x^2 - 4}{4 - 3x}}$	$x \leq -2 \vee \frac{4}{3} < x \leq 2$
348	$y = \frac{\sqrt{1 - 2x^2}}{\arccos(7x - 1)}$	$0 \leq x < \frac{2}{7}$
349	$y = \frac{\arctan(\sqrt{x} - 5)}{\ln 5 - x^2 }$	$0 \leq x < \sqrt{6} \vee x > \sqrt{6} \wedge$ $x \neq 2 \wedge x \neq \sqrt{5}$
350	$y = \left(\frac{x+1}{x^2}\right)^{\sin x}$	$x > -1 \wedge x \neq 0$
351	$y = \sqrt{2 - \log_2(x+2)}$	$-2 < x \leq 2$
352	$y = \frac{\sqrt{\log_2(x-1)}}{\sin x (\cos x - 1)}$	$x \geq 2 \wedge x \neq k\pi$
353	$y = \frac{\sqrt{e^{\frac{1}{2}\tan x}}}{\log_3(x^2 - x) - 2}$	$x < 0 \vee x > 1 \wedge x \neq \frac{\pi}{2} + k\pi \wedge$ $x \neq \frac{1 \pm \sqrt{37}}{2}$
354	$y = \sqrt{1 - \sqrt{2 - \sqrt{3 - x}}}$	$-1 \leq x \leq 2$
355	$y = \frac{\ln \sin x}{\ln \cos x}$	$2k\pi < x < \frac{\pi}{2} + 2k\pi$

356	$y = \sqrt{1 + \frac{\pi}{\arcsin x}}$	$0 < x \leq 1$
357	$y = \frac{\sqrt[3]{3 - \arcsin x}}{\sqrt[4]{\arctan \frac{x}{2} + \pi}}$	$-1 \leq x \leq 1$
358	$y = \frac{x - 1}{\pi - \arctan x }$	\mathbb{R}
359	$y = \arctan \sqrt{\frac{x^2 - 4}{x - 1}}$	$-2 \leq x < 1 \vee x \geq 2$
360	$y = \frac{x(x - 3)}{2 \arccos x - \pi}$	$-1 \leq x < 0 \vee 0 < x \leq 1$
361	$y = \sqrt[3]{\frac{x^2 - 1}{ 4 - x^2 }}$	$x \neq -2 \wedge x \neq 2$
362	$y = \sqrt{\frac{x^2 - 1}{2x + 1}} + \sqrt{\frac{3x}{2 - x^2}}$	$1 \leq x < \sqrt{2}$
363	$y = \left[\log_{\frac{1}{3}}(x^2 - 3) \right]^e$	$-2 \leq x < -\sqrt{3} \vee \sqrt{3} \leq x < 2$
364	$y = \sqrt{2 - e^x - 3 }$	$0 \leq x \leq \ln 5$
365	$y = \frac{1}{\arccos(2x)} - \frac{1}{\arcsin(3x)}$	$-\frac{1}{3} \leq x \leq \frac{1}{3} \wedge x \neq 0$

366	$y = \ln \frac{x^2 - 9}{x - 2} + e^{\sqrt{x^4 - 16}}$	$-3 < x \leq -2 \vee x > 3$
367	$y = \sqrt{\frac{2 \cos^2 x + 3 \sin x - 3}{1 - 2 \sin^2 x - \cos x}} \quad \text{con } x \in [0, 2\pi]$	$0 < x \leq \frac{\pi}{6} \vee \frac{2}{3}\pi < x \leq \frac{5}{6}\pi \vee \frac{4}{3}\pi < x < 2\pi$
368	$y = (\sin x - \cos x)^{\ln \sqrt{2 \sin x - 1}} \quad \text{con } x \in [0, 2\pi]$	$\frac{\pi}{4} \leq x < \frac{5}{6}\pi$
369	$y = \sqrt{x + 1 - \sqrt[3]{x^3 + 2x^2 + 3x + 6}}$	$x \leq -\sqrt{5} \vee x \geq \sqrt{5}$
370	$y = \frac{5}{x - 1} \ln \frac{e^x - 1}{x - 1}$	$x < 0 \vee x > 1$
371	$y = \arccos[\ln(1 - x) - \ln(x + 1)]$	$\frac{1 - e}{1 + e} \leq x \leq \frac{e - 1}{e + 1}$
372	$y = \arcsin \frac{\tan^2 x}{3}$	$-\frac{\pi}{3} + k\pi \leq x \leq \frac{\pi}{3} + k\pi$
373	$y = \sqrt{\arcsin \ln(x + 2)}$	$-1 \leq x \leq e - 2$
374	$y = \sqrt{\frac{x^3 - 1}{x^2 - 9x + 18}} + e^{\frac{1}{\tan x}}$	$1 \leq x < 3 \vee x > 6 \wedge x \neq k\frac{\pi}{2}$
375	$y = \frac{\tan \ln 2x}{\ln \tan 2x}$	$k\frac{\pi}{2} < x < \frac{\pi}{8} + k\frac{\pi}{2} \vee$ $\frac{\pi}{8} + k\frac{\pi}{2} < x < \frac{\pi}{4} + k\frac{\pi}{2} \wedge$ $x \neq \frac{1}{2}e^{\frac{\pi}{2} + k\pi} \quad k \in \mathbb{N}$

376	$y = \sqrt{\log_{\frac{1}{2}} \arccos x + \log_2 \frac{\pi}{3}}$	$\frac{1}{2} \leq x < 1$
377	$y = \frac{\sqrt{\arcsin x - \frac{\pi}{3}}}{\ln x}$	$\frac{\sqrt{3}}{2} \leq x < 1$
378	$y = \frac{1}{2 \ln 3x - 1} + \ln \arcsin x$	$0 < x < \frac{\sqrt{e}}{3} \vee \frac{\sqrt{e}}{3} < x \leq 1$
379	$y = 1 - e^{ \sin x - 1} + e^{\frac{1}{\sqrt{1 - \tan x}}}$	$-\frac{\pi}{2} + k\pi < x < \frac{\pi}{4} + k\pi$
380	$y = \ln(x^2 - x - 4) + \arccos \ln x$	$\frac{1 + \sqrt{17}}{2} < x \leq e$
381	$y = \arcsin \frac{\ln x - 1}{\ln x - 2}$	$0 < x \leq e\sqrt{e}$
382	$y = \sqrt{\log_3^2 x - \log_3 x - 2 }$	$0 < x \leq \frac{1}{9} \vee x \geq 3$
383	$y = \frac{x^2 + 1 + \sqrt{8 - x^3}}{\sqrt{3 - x} - x + 3}$	$x \leq 2$
384	$y = \log_3(3 - x - 3 - x - 2)$	$x > 1$
385	$y = [\log_2(x^2 - 4x + 4)]^{\sqrt{2}}$	$x \leq 1 \vee x \geq 3$
386	$y = \ln(2\sin^2 x - \sin x - 1) \quad \text{con } x \in [0, 2\pi]$	$\frac{7}{6}\pi < x < \frac{11}{6}\pi$

387	$y = \arccos(x^2 - 10x + 1)$	$0 \leq x \leq 5 - \sqrt{23} \vee 5 + \sqrt{23} \leq x \leq 10$
388	$y = \arcsin \tan x + \frac{1}{\arccos \sin x}$	$-\frac{\pi}{4} + k\pi \leq x \leq \frac{\pi}{4} + k\pi$
389	$y = \sqrt{\frac{\arcsin 2x}{\arctan x - \frac{\pi}{3}}}$	$-\frac{1}{2} \leq x \leq 0$
390	$y = \ln(x^2 - x - 4) + \arccos \ln x$	$\frac{1 + \sqrt{17}}{2} < x \leq e$

esercizi di riepilogo più impegnativi



391	$y = \log_{x-5} (x - 2)$	$5 < x < 6 \vee x > 6$
392	$y = \sqrt{3x - x - 2x^2 - 1 }$	$\frac{\sqrt{6} - 2}{2} \leq x \leq \frac{\sqrt{6} + 2}{2}$
393	$y = \sqrt{\log_2(x + 3 - 3) - \log_2(x + 7 + 1)}$	$x \leq -7$
394	$y = \arccos(-3 + \sqrt{24 \sin^2 x - 2})$	$\frac{\pi}{6} + k\pi \leq x \leq \frac{\pi}{3} + k\pi \vee$ $-\frac{\pi}{3} + k\pi \leq x \leq -\frac{\pi}{6} + k\pi$
395	$y = \sqrt{\log_{x-1} \frac{3x^2 + 10x + 3}{11}}$	$x > 2$
396	$y = \frac{\ln(\sqrt{9x^2 - 30x + 25} - \sqrt{x^2 + 5x - 6})}{x - 3 - \sqrt{x^2 - 4}}$	$x \leq 6 \vee 1 \leq x < \frac{35 - \sqrt{233}}{16} \vee$ $x > \frac{35 + \sqrt{233}}{16}$

397	$y = \frac{\sqrt{\frac{\pi}{4} - \arctan \sin x}}{ \cot 2x - \sqrt{3}}$	$x \neq \pm \frac{\pi}{12} + k \frac{\pi}{2} \wedge x \neq k \frac{\pi}{2}$
398	$y = e^{\sqrt{\frac{\sin^2 x - \frac{1}{2}}{\cos^3 x}}}$	$\frac{\pi}{4} + 2k\pi \leq x < \frac{\pi}{2} + 2k\pi \vee$ $\frac{3\pi}{4} + 2k\pi \leq x \leq \frac{5\pi}{4} + 2k\pi \vee$ $\frac{3\pi}{2} + 2k\pi < x \leq \frac{7\pi}{4} + 2k\pi$
399	$y = \sqrt{\frac{\ln \arctan(x^2 - x) - \ln \frac{\pi}{4}}{e^{\frac{1}{2x}} - 1}}$	$\frac{1 - \sqrt{5}}{2} \leq x < 0 \vee x \geq \frac{1 + \sqrt{5}}{2}$
400	$y = \sqrt{\log_{\frac{1}{2}} \arccos x + \log_2 \frac{\pi}{3}}$	$\frac{1}{2} \leq x < 1$
401	$y = \frac{1}{\sqrt[4]{x^2 - 5x + 6} - \sqrt{x - 1}}$	$1 \leq x < \frac{5}{3} \vee \frac{5}{3} < x \leq 2 \vee x \geq 3$
402	$y = \frac{\sqrt{x^2 - 2x + 1} - 3}{\sqrt{ x } - \sqrt{x + 1}}$	$-1 \leq x < -\frac{1}{2} \vee x > -\frac{1}{2}$
403	$y = \frac{ x - 1 + \sqrt{x}}{\sqrt{3 - x^2 - 5x + 6 } - \sqrt{x + 1}}$	$\frac{5 - \sqrt{13}}{2} \leq x \leq \frac{5 + \sqrt{13}}{2} \wedge x \neq 2$
404	$y = \frac{\sqrt{x + x^2 - 1 } - 3}{\sqrt{x + \sqrt{x - 1}}}$	$x \geq 1$

405	$y = \sqrt{\frac{x^2 - x + 3 }{\sqrt{x - 1} + x + 3 }}$	$x \geq \frac{1 + \sqrt{13}}{2}$
406	$y = \sqrt{x - \sqrt{2x + 3}} + \sqrt{x^3 - 3x^2}$	$x \geq 3$
407	$y = \sqrt[4]{x^5 + x^3} + \sqrt{\sqrt{3x - 2} - 5}$	$x \geq 9$
408	$y = \sqrt{\frac{\log_{\frac{1}{2}}(x - 3) + 2}{3 + \log_{x+1} 5}}$	$3 < x \leq 7$
409	$y = \ln \ln x $	$x \neq -1 \wedge x \neq 0 \wedge x \neq 1$
410	$y = \ln \left(2 - \left \frac{x}{1 - 3x} \right \right)$	$x < \frac{2}{7} \vee x > \frac{2}{5}$
411	$y = \sqrt{\frac{\log_x x - 5 }{e^{\ln \frac{2x(x-4)}{x+1}}}}$	$x \geq 6$
412	$y = \frac{3 + e^{-\frac{x^2 - 3x + 2}{x - 6}}}{\log_{\frac{3}{4}} \sqrt{x^2 - \frac{1}{4}}}$	$x < -\frac{1}{2} \vee x > \frac{1}{2} \wedge$ $x \neq \pm \frac{\sqrt{5}}{2} \wedge x \neq 6$

413	$y = \frac{\sqrt{\sin x \left(\cos x - \frac{1}{2} \right)}}{ \tan x - 1}$	$2k \leq x \leq \frac{\pi}{3} + 2k\pi \vee$ $\pi + 2k\pi \leq x \leq \frac{5\pi}{3} + 2k\pi \wedge$ $x \neq \frac{3}{2}\pi + 2k\pi \wedge x \neq \frac{\pi}{4} + k\pi$
414	$y = \frac{\sqrt{ \cos x - \frac{1}{2}}}{e^{\frac{1}{\sin x}}}$	$-\frac{\pi}{3} + k\pi \leq x \leq \frac{\pi}{3} + k\pi \wedge x \neq k\pi$
415	$y = \frac{\ln(\sin x - 1)}{\ln \sqrt{\cos x}}$	\emptyset
416	$y = e^{\frac{\tan x}{ \cos x - \frac{\sqrt{2}}{2}}}$	$x \neq \frac{\pi}{2} + k\pi \wedge x \neq \frac{\pi}{4} + k\frac{\pi}{2}$
417	$y = \frac{\sqrt{\arcsin(2 x - 1)}}{\ln(2x^3 - x)}$	$-\frac{\sqrt{2}}{2} \leq x \leq -\frac{1}{2} \vee \frac{\sqrt{2}}{2} < x < 1$
418	$y = \frac{\ln \ln(x - 1 - 5)}{x} \cdot \frac{1}{1 - e^{\sqrt{x - 1 - x }}}$	$x > 7$
419	$y = \frac{1}{3} \frac{\ln \ln \frac{1}{\sqrt{x^2 + 3x - 10}}}{\sqrt{ x - 1 - x^2}}$	\emptyset
420	$y = \frac{\sqrt[x]{e^{x+1} + 3}}{\sqrt{x^2 - 4x + 4}}$	$x > 0 \wedge x \neq 2 \wedge x \in \mathbb{N}$
421	$y = \frac{\left \ln \frac{x^2 + x - 1}{x - 2} - 1 \right }{\sqrt{x}}$	$0 < x < \frac{1}{2}(\sqrt{5} - 1) \vee x > 2$

422	$y = e^x \ln \left(2 \frac{x^2-1}{2x} + x e^x \right)$	$x > 0$
423	$y = \ln \left(\sin x - \frac{\sqrt{3}}{2} \right) + \ln \sqrt{\cos x} - \ln \left(\tan \frac{x}{2} + 1 \right)$	$\frac{\pi}{3} + 2k\pi < x < \frac{\pi}{2} + 2k\pi$
424	$y = \log_{\frac{1}{2}} \frac{x^2-1}{x^2+1} + 3^{\frac{x}{\sqrt{x-1}}} \log_2 \frac{1}{x+2} - \sqrt{2} e^{\frac{1}{\ln x}} \log_2 \sqrt{\frac{x}{x+1}}$	$x > 1$
425	$y = \sqrt{\log_a(x^2 + 2x + 4) - \log_a(x^2 + x + 3)} + \log_a(a^{x^2+3x} - a^4)$ $\text{con } a \in \mathbb{R}^+ - \{1\}$	$\text{se } a > 1 \rightarrow x > 1$ $\text{se } 0 < a < 1 \rightarrow -4 \leq x \leq -1$

