

stabilisci se sono verificati i seguenti limiti

1	$\lim_{x \rightarrow 2} (2x + 5) = 1$	<i>non verificato</i>
2	$\lim_{x \rightarrow -2} (2x + 5) = 1$	<i>verificato</i>
3	$\lim_{x \rightarrow 3} (2x + 1) = 7$	<i>verificato</i>
4	$\lim_{x \rightarrow 10} \frac{2x + 10}{6} = 5$	<i>verificato</i>
5	$\lim_{x \rightarrow 0} (3 - x) = 3$	<i>verificato</i>
6	$\lim_{x \rightarrow 0} (1 - 3x) = -2$	<i>non verificato</i>
7	$\lim_{x \rightarrow 3} (x^2 - 2) = 7$	<i>verificato</i>
8	$\lim_{x \rightarrow -3} (5x - 7) = 8$	<i>non verificato</i>
9	$\lim_{x \rightarrow -4} (11x - 14) = 30$	<i>non verificato</i>
10	$\lim_{x \rightarrow -1} (4 - 4x^2) = 0$	<i>verificato</i>
11	$\lim_{x \rightarrow 1} (e^{2x-1} - e) = 0$	<i>verificato</i>
12	$\lim_{x \rightarrow 0} e^x = 1$	<i>verificato</i>
13	$\lim_{x \rightarrow 0} (x^4 - x^2) = 2$	<i>non verificato</i>
14	$\lim_{x \rightarrow 2} \frac{1}{x} = \frac{1}{2}$	<i>verificato</i>
15	$\lim_{x \rightarrow 2} \frac{1}{x} = \frac{1}{4}$	<i>non verificato</i>
16	$\lim_{x \rightarrow 4} \sqrt{2x + 1} = 3$	<i>verificato</i>
17	$\lim_{x \rightarrow 0}  x - 1  = 1$	<i>verificato</i>
18	$\lim_{x \rightarrow 0} \frac{1}{x^4} = 1$	<i>non verificato</i>

19	$\lim_{x \rightarrow -1} \frac{1}{x^4} = 1$	verificato
20	$\lim_{x \rightarrow -4} \sqrt{ x } = 2$	verificato
21	$\lim_{x \rightarrow -4} \sqrt{ x } = 3$	non verificato
22	$\lim_{x \rightarrow +\infty} (4x - 7) = +\infty$	verificato
23	$\lim_{x \rightarrow +\infty} (5x - 1) = -\infty$	non verificato

verifica i seguenti limiti utilizzando la definizione

24	$\lim_{x \rightarrow 2} (2x - 1) = 3$	25	$\lim_{x \rightarrow 2} \frac{3}{x - 2} = \infty$
26	$\lim_{x \rightarrow \infty} (2 - e^{-x^2}) = 2$	27	$\lim_{x \rightarrow 2} \frac{9x}{4x + 1} = 2$
28	$\lim_{x \rightarrow +\infty} \frac{x + 4}{x + 3} = 1$	29	$\lim_{x \rightarrow +\infty} \sqrt{\frac{3}{1 + x}} = 0$
30	$\lim_{x \rightarrow +\infty} (x^2 - 3x - 1) = +\infty$	31	$\lim_{x \rightarrow +\infty} (2x - 3x^2) = -\infty$
32	$\lim_{x \rightarrow -\infty} \log_2(2x^2 + 1) = +\infty$	33	$\lim_{x \rightarrow 0} \frac{1}{x^2} = +\infty$
34	$\lim_{x \rightarrow 1} \frac{2x + 4}{2x - 1} = 6$	35	$\lim_{x \rightarrow 2} \left(\frac{x}{3} + 2\right) = \frac{8}{3}$
36	$\lim_{x \rightarrow +\infty} \sqrt{x + 2} = +\infty$	37	$\lim_{x \rightarrow +\infty} \sqrt{3x^2 + 1} = +\infty$
38	$\lim_{x \rightarrow 2} \frac{x + 4}{x - 2} = \infty$	39	$\lim_{x \rightarrow 2} \frac{x^2 - 4}{x + 2} = 0$
40	$\lim_{x \rightarrow -2^+} \log_5(x + 2) = -\infty$	41	$\lim_{x \rightarrow 1^-} \sqrt{1 - x} = 0$
42	$\lim_{x \rightarrow 1} (3x^2 - 2) = 1$	43	$\lim_{x \rightarrow -\infty} \log_{\frac{1}{5}}(1 - x) = -\infty$
44	$\lim_{x \rightarrow 2^+} \frac{7}{4 - 2^x} = -\infty$	45	$\lim_{x \rightarrow -\infty} \arctg x = -\frac{\pi}{2}$
46	$\lim_{x \rightarrow 0^+} \frac{2}{1 - e^{2x}} = -\infty$	47	$\lim_{x \rightarrow +\infty} \operatorname{sen}\left(\frac{3}{1 - x}\right) = 0$
48	$\lim_{x \rightarrow 2} \frac{x}{4x - 3} = \frac{2}{5}$	49	$\lim_{x \rightarrow +\infty} (3x^2 - 2) = +\infty$

50	$\lim_{x \rightarrow \infty} \frac{3x+1}{2x-3} = \frac{3}{2}$	51	$\lim_{x \rightarrow 0^+} \ln(x+2x^2) = -\infty$
52	$\lim_{x \rightarrow 0} (2 - \operatorname{tg} x) = 2$	53	$\lim_{x \rightarrow 0} (2 -  3x+2 ) = 0$
54	$\lim_{x \rightarrow 3} \frac{6}{x-3} = \infty$	55	$\lim_{x \rightarrow 5} (2x-1) = 9$
56	$\lim_{x \rightarrow \infty} \operatorname{sen} \frac{1}{x} = 0$	57	$\lim_{x \rightarrow -\infty} (3^x + 1) = 1$
58	$\lim_{x \rightarrow 0^+} \ln x = -\infty$	59	$\lim_{x \rightarrow -\infty} \sqrt{2-4x} = +\infty$

calcola i seguenti limiti che si presentano nella forma Determinata

60	$\lim_{x \rightarrow 2} (2x^3 + x^2 - 3x - 1)$	13	61	$\lim_{x \rightarrow 2^+} \arccos \frac{\sqrt{x-2}}{x+1}$	$\frac{\pi}{2}$
62	$\lim_{x \rightarrow -1} (-x^3 + 2x^2 - 4)$	-1	63	$\lim_{x \rightarrow 0} \frac{e^{\operatorname{sen} x} - 1}{\cos x + 2}$	0
64	$\lim_{x \rightarrow -3} \frac{x^2 - 1}{x - 2}$	$-\frac{8}{5}$	65	$\lim_{x \rightarrow 3} \left(\frac{3+x}{x+2}\right)^{x-3}$	1
66	$\lim_{x \rightarrow 2} \frac{4-x^2}{x^3 + 2x^2 - 3x - 4}$	0	67	$\lim_{x \rightarrow 0} \log_2 \sqrt{\left(\frac{1}{3}\right)^x + 3}$	1
68	$\lim_{x \rightarrow 3^+} \log_2 \frac{x-3}{3}$	$+\infty$	69	$\lim_{x \rightarrow 1} \frac{x^3 - 1}{x + 5}$	0
70	$\lim_{x \rightarrow -\infty} e^{x+5}$	0	71	$\lim_{x \rightarrow 1^+} \frac{x+5}{x^3 - 1}$	$+\infty$
72	$\lim_{x \rightarrow 2} \sqrt{12+x^2}$	4	73	$\lim_{x \rightarrow \frac{\pi}{2}} \frac{2 \operatorname{sen} x - 3}{2 \cos x}$	$\infty$
74	$\lim_{x \rightarrow 2^-} \operatorname{arctg} \frac{3}{x-2}$	$-\frac{\pi}{2}$	75	$\lim_{x \rightarrow -\infty} \log_5 \operatorname{sen}(2^x + \pi)$	$-\infty$
76	$\lim_{x \rightarrow 2} \frac{2x^2 - x - 1}{3x - 1}$	1	77	$\lim_{x \rightarrow 1^+} \frac{5}{3^x - 3}$	$+\infty$
78	$\lim_{x \rightarrow 0} \ln \frac{x+3}{2x+1}$	$\ln 3$	79	$\lim_{x \rightarrow 3^+} \operatorname{arctg} \frac{4}{3-x}$	$-\frac{\pi}{2}$
80	$\lim_{x \rightarrow \pi^-} \frac{2 \cos x + 1}{\operatorname{sen} x}$	$-\infty$	81	$\lim_{x \rightarrow 0} \sqrt{\frac{3^x + 2}{\left(\frac{1}{3}\right)^x + 1}}$	$\frac{\sqrt{6}}{2}$

82	$\lim_{x \rightarrow 0} \frac{e^{x+3}}{e^{-x} + e^x}$	$\frac{e^3}{2}$	83	$\lim_{x \rightarrow +\infty} \left(\frac{1}{5}\right)^{x+3}$	0
84	$\lim_{x \rightarrow +\infty} \ln\left(1 + \frac{3}{x}\right)$	0	85	$\lim_{x \rightarrow 1} \frac{x^2 - 7x + 1}{5x - 2}$	$-\frac{5}{3}$
86	$\lim_{x \rightarrow \frac{1}{4}^+} \frac{6x^2 - 2x + 1}{4x - 1}$	$+\infty$	87	$\lim_{x \rightarrow +\infty} \sqrt{\ln\left(1 + \frac{5}{x}\right)}$	0
88	$\lim_{x \rightarrow \frac{1}{4}^-} \frac{6x^2 - 2x + 1}{4x - 1}$	$-\infty$	89	$\lim_{x \rightarrow 3^+} \frac{\log_2(x - 3)}{5 \arcsin(4 - x)}$	$-\infty$
90	$\lim_{x \rightarrow 1} \frac{\arcsin(1 - x)}{\sqrt{e^x}}$	0	91	$\lim_{x \rightarrow 0} \frac{3^x + 1}{\log_3(x + 3)}$	2
92	$\lim_{x \rightarrow -\infty} (e^{x+2} + e^{2x})$	0	93	$\lim_{x \rightarrow 0} \arcsin \frac{2x^2 + 3x + 1}{x - 1}$	$-\frac{\pi}{2}$

calcola i seguenti limiti che si presentano nella forma indeterminata 0/0

94	$\lim_{x \rightarrow 1} \frac{x^2 - 1}{x - 1}$	2	95	$\lim_{x \rightarrow 2} \frac{x^3 - 8}{x - 2}$	12
96	$\lim_{x \rightarrow 1} \frac{x - 1}{x^3 - 4x^2 + 4x - 1}$	-1	97	$\lim_{x \rightarrow -\sqrt{2}} \frac{x^4 - 4}{x + \sqrt{2}}$	$-8\sqrt{2}$
98	$\lim_{x \rightarrow 2} \frac{x^3 - 7x + 6}{x^3 + 2x^2 - 13x + 10}$	$\frac{5}{7}$	99	$\lim_{x \rightarrow 3} \frac{x^4 - 6x^3 + 10x^2 - 6x + 9}{x^4 - 4x^3 - 2x^2 + 12x + 9}$	$\frac{5}{8}$
100	$\lim_{x \rightarrow \sqrt{3}} \frac{3 - x^2}{\sqrt{3} - x}$	$2\sqrt{3}$	101	$\lim_{x \rightarrow 1} \frac{x - 1}{\sqrt{x^2 + 2x - 3}}$	0
102	$\lim_{x \rightarrow 2} \frac{x^2 - 4}{x^2 - 4x + 4}$	$\infty$	103	$\lim_{x \rightarrow -3} \frac{x^3 - 8x + 3}{x^2 + 8x + 15}$	$\frac{19}{2}$
104	$\lim_{x \rightarrow \sqrt{2}} \frac{x^2 - 2}{2\sqrt{2} - x^3}$	$-\frac{\sqrt{2}}{3}$	105	$\lim_{x \rightarrow 3} \frac{\sqrt{x^2 - 9}}{\sqrt{x - 3}}$	$\sqrt{6}$
106	$\lim_{x \rightarrow 2} \frac{x^2 - 4}{8 - x^3}$	$-\frac{1}{3}$	107	$\lim_{x \rightarrow -2} \frac{x^4 - 3x^2 + 5x + 6}{x^3 - 3x^2 - 8x + 4}$	$-\frac{15}{16}$
108	$\lim_{x \rightarrow 1} \frac{\sqrt{x^2 + 2x - 3}}{x - 1}$	$\infty$	109	$\lim_{x \rightarrow -1} \frac{x^3 - x}{x^3 - x^2 + x + 3}$	$\frac{1}{3}$
110	$\lim_{x \rightarrow \frac{1}{4}} \frac{4x^3 - 13x^2 + 7x - 1}{8x^3 - 6x^2 + 9x - 2}$	$\frac{1}{6}$	111	$\lim_{x \rightarrow 3} \frac{3 - x}{\sqrt[3]{30 - x} - 3}$	27

112	$\lim_{x \rightarrow -2} \frac{4 - x^2}{x^4 - 16}$	$-\frac{1}{8}$	113	$\lim_{x \rightarrow 2} \frac{x^2 - 5x + 6}{x^2 - 4}$	$-\frac{1}{4}$
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calcola i seguenti limiti che si presentano nella forma indeterminata  $+\infty - \infty$

114	$\lim_{x \rightarrow +\infty} (\sqrt{x^2 - 5x} - x)$	$-\frac{5}{2}$	115	$\lim_{x \rightarrow 3} \left( \frac{1}{x-3} - \frac{6}{x^2-9} \right)$	$\frac{1}{6}$
116	$\lim_{x \rightarrow +\infty} (\sqrt{x^2 + 3} - x)$	0	117	$\lim_{x \rightarrow +\infty} (\sqrt{3x+1} - \sqrt{x+2})$	$+\infty$
118	$\lim_{x \rightarrow +\infty} (3x - \sqrt{9x^2 - 7})$	0	119	$\lim_{x \rightarrow -\infty} (x + \sqrt{x^2 + x + 3})$	$-\frac{1}{2}$
120	$\lim_{x \rightarrow +\infty} (\sqrt{x^2 - 3x} - \sqrt{x^2 - 5x + 1})$	+1	121	$\lim_{x \rightarrow +\infty} (\sqrt[3]{x+1} - \sqrt[3]{x-3})$	0
122	$\lim_{x \rightarrow +\infty} \frac{2}{(\sqrt{x^2 + 3} - x)}$	$+\infty$	123	$\lim_{x \rightarrow -\infty} (\sqrt{x^2 + x} + x)$	$-\frac{1}{2}$
124	$\lim_{x \rightarrow 5} \left( \frac{1}{x-5} - \frac{10}{x^2-25} \right)$	$\frac{1}{10}$	125	$\lim_{x \rightarrow +\infty} (\sqrt{x^3-3} - \sqrt{x^3+5})$	0
126	$\lim_{x \rightarrow +\infty} (\sqrt{x^2 - x + 1} - \sqrt{x^2 - 4x - 2})$	$+\frac{3}{2}$	127	$\lim_{x \rightarrow +\infty} (\sqrt[3]{x+1} - \sqrt[3]{x})$	0
128	$\lim_{x \rightarrow -\infty} (\sqrt{4+x^2} + x)$	0	129	$\lim_{x \rightarrow +\infty} (\sqrt{x^4 - 3x + 1} - x^2)$	0
130	$\lim_{x \rightarrow +\infty} (\sqrt{x^2 + 6x + 7} - x)$	3	131	$\lim_{x \rightarrow +\infty} (\sqrt[3]{x^3 + 6x^2 - 3x + 2} - x)$	2
132	$\lim_{x \rightarrow +\infty} (\sqrt{x^6 - 4x + 11} - x^3)$	0	133	$\lim_{x \rightarrow -\infty} (\sqrt{x^2 - 3} - \sqrt{x^2 + 5x - 6})$	$\frac{5}{2}$

calcola i seguenti limiti che si presentano nella forma indeterminata  $\infty/\infty$

134	$\lim_{x \rightarrow +\infty} \frac{2x^3 - x^2 + 3}{2 - 3x^3}$	$-\frac{2}{3}$	135	$\lim_{x \rightarrow +\infty} \frac{-x^2 + 2x - 2}{2x^3 + 5x - 3}$	0
136	$\lim_{x \rightarrow +\infty} \frac{x+2}{2x^2-5}$	0	137	$\lim_{x \rightarrow -\infty} \frac{x^3+1}{-x^2+x+3}$	$+\infty$
138	$\lim_{x \rightarrow +\infty} \frac{3x^2 + 2x^4 - 5}{2x^2 + 5x + 6}$	$+\infty$	139	$\lim_{x \rightarrow \infty} \frac{2x^2 + 9}{\sqrt{2}x^2 + 3x - 6}$	$\sqrt{2}$
140	$\lim_{x \rightarrow +\infty} \frac{3x^2 + 2x^4 - 5x^5 + 2}{4x^2 - 2x^5 + 6x^3 - 6}$	$\frac{5}{2}$	141	$\lim_{x \rightarrow \infty} \frac{x^3 + 2x^2 - x + 1}{-x^4 + 2x^3 - 5x + 12}$	0

142	$\lim_{x \rightarrow +\infty} \frac{\ln 2 x^2 + 5x - 1}{2x^2 - 5}$	$\frac{\ln 2}{2}$	143	$\lim_{x \rightarrow +\infty} \frac{x^2 + 2x - 8}{2 - 5x}$	$-\infty$
144	$\lim_{x \rightarrow +\infty} \frac{x^4 - 5}{-3x^4 + 5x^3 + x^2 - 2x + 1}$	$-\frac{1}{3}$	145	$\lim_{x \rightarrow +\infty} \frac{4x^2 + 2x^7 - 3x + 2}{-3x^2 + 5x^8 + 6x - 4}$	0
146	$\lim_{x \rightarrow -\infty} \frac{3x^4 + 5}{x^3 + 3x - 2}$	$-\infty$	147	$\lim_{x \rightarrow +\infty} \frac{6x^2 + 3x - 5}{3x^2 + 12}$	2
148	$\lim_{x \rightarrow -\infty} \frac{-x^3 - 6x^2 - 5x + 4}{3x^2 - 8x}$	$+\infty$	149	$\lim_{x \rightarrow +\infty} \frac{2x^2 - x - 3}{2\sqrt{x} - 4x^3}$	0
150	$\lim_{x \rightarrow \infty} \frac{-5x^5 + 2}{-x^4 - 3x^5 + 7x^3 - 6x + 1}$	$\frac{5}{3}$	151	$\lim_{x \rightarrow \infty} \frac{2x^4 + 3}{5x^2 - 7x^4}$	$-\frac{2}{7}$
152	$\lim_{x \rightarrow +\infty} \frac{x^2 - 3x^4 - 10}{-3x^2 + 4x^5 - 9}$	0	153	$\lim_{x \rightarrow +\infty} \frac{6x^3 - x^2 + 4x - 2}{3x^2 + 25x - 1}$	$+\infty$

calcola i seguenti limiti utilizzando i limiti notevoli delle funzioni goniometriche

154	$\lim_{x \rightarrow 0} \frac{\text{sen}(5x)}{\text{sen}(2x)}$	$\frac{5}{2}$	155	$\lim_{x \rightarrow 0} \frac{1 - \cos(3x)}{x \text{sen } x}$	$\frac{9}{2}$
156	$\lim_{x \rightarrow 0} \frac{2x + \text{sen}(3x)}{4x + \text{sen}(7x)}$	$\frac{5}{11}$	157	$\lim_{x \rightarrow 0} \frac{\text{sen}^2 x}{5x \text{tg } x}$	$\frac{1}{5}$
158	$\lim_{x \rightarrow 0} \frac{\text{sen}(x^2 - 5x)}{\text{sen } 3x}$	$-\frac{5}{3}$	159	$\lim_{x \rightarrow 0} \frac{2x^2}{1 - \cos^3 x}$	$\frac{4}{3}$
160	$\lim_{x \rightarrow 0} \frac{1 - \cos^3 x}{5x \text{sen } x}$	$\frac{3}{10}$	161	$\lim_{x \rightarrow 0} \frac{7 \text{sen } x}{x + \text{tg } x}$	$\frac{7}{2}$
162	$\lim_{x \rightarrow 0} \frac{1 - \cos x}{4 \text{sen } \frac{x}{2} \text{tg } x}$	$\frac{1}{4}$	163	$\lim_{x \rightarrow 0} \frac{\arcsen(6x)}{\arctg(5x)}$	$\frac{6}{5}$
164	$\lim_{x \rightarrow 0} \frac{3 \arcsen x + 2 \arctg x}{\text{sen } x + 5x}$	$\frac{5}{6}$	165	$\lim_{x \rightarrow \pi} \frac{\text{sen } x + \text{sen}^3 x}{x - \pi}$	-1
166	$\lim_{x \rightarrow 0} \frac{1 - \cos(3x)}{\text{sen}^2 2x}$	$\frac{9}{8}$	167	$\lim_{x \rightarrow 0} \frac{x \cdot \arctg(2x)}{1 - \cos(3x)}$	$\frac{4}{9}$
168	$\lim_{x \rightarrow 0} \frac{\text{tg}^2(3x)}{1 - \cos x}$	18	169	$\lim_{x \rightarrow 0} \frac{\cos x - 1}{4 \text{tg}^2 x}$	$-\frac{1}{8}$
170	$\lim_{x \rightarrow 0^+} \frac{\sqrt{1 - \cos x}}{5x}$	$\frac{\sqrt{2}}{10}$	171	$\lim_{x \rightarrow \frac{\pi}{2}} \frac{5 \text{sen}^2 x + \text{sen } x - 6}{\left(x - \frac{\pi}{2}\right)}$	0

calcola i seguenti limiti utilizzando i limiti notevoli delle funzioni esponenziali e logaritmiche

172	$\lim_{x \rightarrow \infty} \left(1 + \frac{1}{x}\right)^{3x}$	$e^3$	173	$\lim_{x \rightarrow 0} (1+x)^{\frac{7}{x}}$	$e^7$
174	$\lim_{x \rightarrow \infty} \left(1 + \frac{1}{2x}\right)^x$	$\sqrt{e}$	175	$\lim_{x \rightarrow 0} \left(1 - \frac{x}{3}\right)^{-\frac{5}{x}}$	$\sqrt[3]{e^5}$
176	$\lim_{x \rightarrow 0^+} \frac{(1+5x^2)^{\frac{3}{x^2}}}{5x+3}$	$\frac{e^{15}}{3}$	177	$\lim_{x \rightarrow 0} \frac{e^{3x} - 1}{5x}$	$\frac{3}{5}$
178	$\lim_{x \rightarrow 2} \frac{e^x - e^2}{x - 2}$	$e^2$	179	$\lim_{x \rightarrow 0} \frac{4^x - 1}{5^x - 1}$	$\frac{\ln 4}{\ln 5}$
180	$\lim_{x \rightarrow 0} \frac{x}{1 - e^{3x}}$	$-\frac{1}{3}$	181	$\lim_{x \rightarrow +\infty} x \left(3^{\frac{1}{x}} - 1\right)$	$\ln 3$
182	$\lim_{x \rightarrow 3} \frac{x - 3}{\ln x - \ln 3}$	3	183	$\lim_{x \rightarrow +\infty} \frac{5}{x} [\ln(1+x) - \ln x]$	0
184	$\lim_{x \rightarrow \infty} \frac{1 - e^{\frac{1}{x}}}{\ln\left(1 + \frac{1}{5x}\right)}$	-5	185	$\lim_{x \rightarrow +\infty} \left(\frac{x+3}{x+2}\right)^x$	$e$
186	$\lim_{x \rightarrow 0} \frac{\ln(1+3x^2)}{2x^2 - 1}$	$\frac{3}{\ln 2}$	187	$\lim_{x \rightarrow 0} \frac{\ln(1+x)}{3^x - 1}$	$\frac{1}{\ln 3}$
188	$\lim_{x \rightarrow 3} \frac{\ln(x-2)}{e^x - e^3}$	$\frac{1}{e^3}$	189	$\lim_{x \rightarrow 0} \frac{e^{3x} - 1}{2^{5x} - 1}$	$\frac{3}{5 \ln 2}$
190	$\lim_{x \rightarrow 0} \frac{1 - e^{4x}}{7x}$	$-\frac{4}{7}$	191	$\lim_{x \rightarrow 0} \frac{e^x - e^{-x}}{e^{2x} - e^{-2x}}$	$\frac{1}{2}$

esercizi di riepilogo

192	$\lim_{x \rightarrow -\infty} \left(\sqrt{x^2 - x - 2} - \sqrt{x^2 - 2x + 3}\right)$	$-\frac{1}{2}$	193	$\lim_{x \rightarrow 0} \frac{x \arcsen(7x)}{1 - \cos(4x)}$	$\frac{7}{8}$
194	$\lim_{x \rightarrow -\infty} \frac{x^3 + 2x^2 - 3x}{2x^2 - 3x + 1}$	$-\infty$	195	$\lim_{x \rightarrow 0} \operatorname{tg} x $	0
196	$\lim_{x \rightarrow 0} \frac{x - 2 \operatorname{sen} x}{x + \operatorname{tg} x}$	$-\frac{1}{2}$	197	$\lim_{x \rightarrow 0} \frac{e^{3x} - 1}{\operatorname{sen} 5x}$	$\frac{3}{5}$
198	$\lim_{x \rightarrow 5} \frac{2x - 1 - \sqrt{4x^2 - 2x - 9}}{x - 5}$	$-\frac{1}{9}$	199	$\lim_{x \rightarrow 2} \frac{2x^3 - 9x^2 + 12x - 4}{x^3 - x^2 - 8x + 12}$	$\frac{3}{5}$
200	$\lim_{x \rightarrow \frac{1}{4}} \log_{\frac{1}{3}} \frac{2x+1}{4x-1}$	$-\infty$	201	$\lim_{x \rightarrow 0} \frac{e^{2x^2} - \cos x}{\ln(1+9x^2)}$	$\frac{5}{18}$
202	$\lim_{x \rightarrow 0} \frac{5 - 5e^{3x}}{x}$	-15	203	$\lim_{x \rightarrow 0} \frac{\ln(1+5x) - \ln(1+x)}{\ln(1-x) - \ln(1-2x)}$	+4

204	$\lim_{x \rightarrow +\infty} \frac{2x + \cos x}{3x - \operatorname{sen} x}$	$\infty$	205	$\lim_{x \rightarrow +\infty} \frac{4x^2 + x - 14}{2x^2 + 11x - 2}$	2
206	$\lim_{x \rightarrow +\infty} \frac{2\ln^2 x - 3\ln x + 3}{5\ln^2 x - 6\ln x + 1}$	$\frac{2}{5}$	207	$\lim_{x \rightarrow 2} \frac{2x^2 - 3x - 2}{\ln(2x - 3)}$	$\frac{5}{2}$
208	$\lim_{x \rightarrow \frac{\pi}{2}} \frac{3\operatorname{sen}^2 x + \operatorname{sen} x - 4}{\left(x - \frac{\pi}{2}\right)^2}$	$-\frac{7}{2}$	209	$\lim_{x \rightarrow 0} \frac{e^{3x} - 1}{\operatorname{sen}(5x)}$	$\frac{3}{5}$
210	$\lim_{x \rightarrow \infty} \left(\frac{x^2}{x^2 - 2}\right)^{x^2 - 2}$	$e^2$	211	$\lim_{x \rightarrow +\infty} \frac{1}{\sqrt{x^2 - x - 2} - \sqrt{x^2 - 2x - 3}}$	2
212	$\lim_{x \rightarrow +\infty} \frac{2x^2 - 3x - 2}{-3x^2 + 5x + 6}$	$-\frac{2}{3}$	213	$\lim_{x \rightarrow 0} \frac{x \operatorname{tg} x}{1 - \cos x}$	2
214	$\lim_{x \rightarrow 2} \log_{\frac{1}{4}} \log_3(x - 1)$	$+\infty$	215	$\lim_{x \rightarrow 0} (1 + \operatorname{sen} x)^{\operatorname{cosec} x}$	$e$
216	$\lim_{x \rightarrow \infty} \left(1 + \frac{5}{x}\right)^x$	$e^5$	217	$\lim_{x \rightarrow 0} \frac{1 - \cos(x^2)}{3x^2 \operatorname{sen}^2 x}$	$\frac{1}{6}$
218	$\lim_{x \rightarrow 0} \frac{\operatorname{sen} 120x}{6x}$	20	219	$\lim_{x \rightarrow 1^-} e^{\frac{1}{x-1}}$	0
220	$\lim_{x \rightarrow 0} (3x \operatorname{cotg} x)$	3	221	$\lim_{x \rightarrow -\infty} e^x$	0
222	$\lim_{x \rightarrow 0} \frac{\operatorname{sen} 8x}{\operatorname{tg} 2x}$	4	223	$\lim_{x \rightarrow 0} \frac{\operatorname{sen} \frac{x}{5}}{\log_3(1+x)}$	$\frac{\ln 3}{5}$
224	$\lim_{x \rightarrow 3} \frac{2x^2 - 5x - 3}{x^3 - 3x^2 + x - 3}$	$\frac{7}{10}$	225	$\lim_{x \rightarrow +\infty} \frac{3x - 2}{\sqrt{4x - 1} + \sqrt{x + 1}}$	$+\infty$
226	$\lim_{x \rightarrow +\infty} (\sqrt[3]{x-1} - \sqrt[3]{2x})$	$-\infty$	227	$\lim_{x \rightarrow 0^+} \ln(3x) - \ln(\operatorname{sen}(5x))$	$-\ln \frac{5}{3}$
228	$\lim_{x \rightarrow +\infty} \frac{x^2 - 3x^3 + 2x - 1}{3x^2 - 4x^3 + 2x + 8}$	$\frac{3}{4}$	229	$\lim_{x \rightarrow 2} \frac{\sqrt[3]{10-x} - 2}{x-2}$	$-\frac{1}{12}$
230	$\lim_{x \rightarrow 0} \frac{\operatorname{tg} 3x}{\operatorname{sen} x}$	3	231	$\lim_{x \rightarrow 0} \frac{\operatorname{sen} 5x}{x}$	5
232	$\lim_{x \rightarrow \pi} \frac{\operatorname{sen} x}{x}$	0	233	$\lim_{x \rightarrow +\infty} (x^2 - 4x + 1)$	$+\infty$
234	$\lim_{x \rightarrow +\infty} (\sqrt{x+5} - \sqrt{x-3})$	0	235	$\lim_{x \rightarrow 0} \frac{x^2 -  x }{\operatorname{sen}(4x)}$	$\pm \frac{1}{4}$
236	$\lim_{x \rightarrow 0} \frac{e^{\operatorname{sen} x} - 1}{2x}$	$\frac{1}{2}$	237	$\lim_{x \rightarrow 0} \frac{\ln(1-2x)}{\ln(1+5x)}$	$-\frac{2}{5}$
238	$\lim_{x \rightarrow -\infty} \operatorname{arctg} \frac{x^3 + 5}{x^2 - 2x}$	$-\frac{\pi}{2}$	239	$\lim_{x \rightarrow 0} \frac{\ln(2 - \cos x)}{3\operatorname{sen}^2 x}$	$\frac{1}{6}$
240	$\lim_{x \rightarrow 0} \frac{e^x - e^{-x}}{\operatorname{sen} x}$	2	241	$\lim_{x \rightarrow 0} \frac{\operatorname{tg} x - \operatorname{sen} x}{2x^3}$	$\frac{1}{4}$



242	$\lim_{x \rightarrow 0} \frac{\operatorname{sen} x^3}{\operatorname{sen}^3 x}$	1	243	$\lim_{x \rightarrow \infty} \left(1 - \frac{2e}{x}\right)^x$	$e^{-2e}$
244	$\lim_{x \rightarrow 0} \frac{\operatorname{sen} 3\pi x}{\operatorname{sen} 2\pi x}$	$\frac{3}{2}$	245	$\lim_{x \rightarrow 0} \frac{-3\operatorname{sen} x}{\log_5(1 + 3x)}$	$-\ln 5$
246	$\lim_{x \rightarrow 1} \frac{\ln x}{e^x - e}$	$e^{-1}$	247	$\lim_{x \rightarrow -\infty} \frac{2x^3 + 4x^2 - 3x + 5}{-2x^3 + 9x^2 + 3x - 1}$	-1
248	$\lim_{x \rightarrow 1} \frac{x^2 - 1}{x^3 - 1}$	$\frac{2}{3}$	249	$\lim_{x \rightarrow 0} \frac{1 - \cos(6x)}{5x^2}$	$\frac{18}{5}$
250	$\lim_{x \rightarrow 2} (5x^2 + 2x - 20)^2$	16	251	$\lim_{x \rightarrow 0} \frac{1 - \cos x}{x^2}$	$\frac{1}{2}$
252	$\lim_{x \rightarrow +\infty} (x^2 + 2x + 3)$	$+\infty$	253	$\lim_{x \rightarrow +\infty} \frac{x^3 - 1}{1 - 2x^2}$	$+\infty$
254	$\lim_{x \rightarrow \infty} (-2x^2 - 2x + 5)$	$+\infty$	255	$\lim_{x \rightarrow 1} \frac{x^2 - 5x + 4}{x^2 - 3x + 2}$	3
256	$\lim_{x \rightarrow 1} \frac{2x + 3}{3x + 4}$	$\frac{5}{7}$	257	$\lim_{x \rightarrow 0} \frac{\operatorname{tg} x}{x}$	1
258	$\lim_{x \rightarrow +\infty} \frac{7}{1 + x}$	0	259	$\lim_{x \rightarrow 3} \sqrt{5x + 10}$	5
260	$\lim_{x \rightarrow +\infty} 2x[\log_2(x + 1) - \log_2 x]$	$2 \log_2 e$	261	$\lim_{x \rightarrow +\infty} \sqrt{6x - 35}$	$+\infty$
262	$\lim_{x \rightarrow 1} \frac{e^{5x} - e^5}{\operatorname{sen}(3 \ln x)}$	$\frac{5}{3}e^5$	263	$\lim_{x \rightarrow +\infty} e^x$	$+\infty$
264	$\lim_{x \rightarrow +\infty} (\sqrt{3 + 2x} - \sqrt{4 + 2x})$	0	265	$\lim_{x \rightarrow -\infty} \operatorname{arctg} \frac{2x^3 + 1}{x^2}$	$-\frac{\pi}{2}$
266	$\lim_{x \rightarrow +\infty} \frac{\sqrt{x+1} - \sqrt{x}}{\sqrt{x+3} - \sqrt{x+2}}$	1	267	$\lim_{x \rightarrow +\infty} \left(\frac{2x+1}{2x-5}\right)^{3x-1}$	$e^9$
268	$\lim_{x \rightarrow \infty} \left(1 + \frac{1}{3x}\right)^{5x}$	$e^{\frac{5}{3}}$	269	$\lim_{x \rightarrow 0} \frac{3\operatorname{sen}^3 x + x^3}{\operatorname{tg} x - \operatorname{sen} x}$	8
270	$\lim_{x \rightarrow 0} \frac{\ln(3+x) - \ln 3}{4x}$	$\frac{1}{12}$	271	$\lim_{x \rightarrow \infty} x \operatorname{sen} \frac{1}{x}$	1
272	$\lim_{x \rightarrow 0} \frac{\operatorname{sen} 15x}{5x}$	3	273	$\lim_{x \rightarrow 0} \frac{\operatorname{sen} x - x}{x^3}$	$-\frac{1}{6}$
274	$\lim_{x \rightarrow 1} \frac{\sqrt[3]{x} - 1}{x - 1}$	$\frac{1}{3}$	275	$\lim_{x \rightarrow 0} \frac{e^x - x - 1}{x^2}$	$\frac{1}{2}$
276	$\lim_{x \rightarrow 0} \frac{\ln(1 + 3x)}{\operatorname{sen}(\operatorname{sen} x)}$	3	277	$\lim_{x \rightarrow 0} \frac{\operatorname{sen} 4x}{7x}$	$\frac{4}{7}$