

risolvere le seguenti disequazioni di primo grado con coefficienti interi

1	$2x > 0$	$x > 0$
2	$5x < 20$	$x < 4$
3	$2x - 6 \geq 0$	$x \geq 3$
4	$3x + 9 \leq 0$	$x \leq -3$
5	$-4x < -8$	$x > 2$
6	$-2x > 8$	$x > -4$
7	$10 \leq -2x$	$x \leq -5$
8	$-6 \geq 3x$	$x \leq -2$
9	$3x - 5 < -2$	$x < 1$
10	$4x + 7 < 2x - 9$	$x < -8$
11	$5x - 3 < -2x + 11$	$x < 2$
12	$8x - 5x > 2x - 20$	$x > -20$
13	$7x + 5 > 5x + 13$	$x > 4$
14	$3x - 9 > 7x + 5$	$x < -\frac{7}{2}$
15	$4x - 5 > 2x$	$x > \frac{5}{2}$

16	$6 + 6x < 5$	$x < -\frac{1}{6}$
17	$2x - 6 \geq 9$	$x \geq \frac{15}{2}$
18	$4 + 5x < 1$	$x < -\frac{3}{5}$
19	$-2 - 6x \leq 2x$	$x \geq -\frac{1}{4}$
20	$3x + 2 - 2x \leq 4x - 8$	$x \geq \frac{10}{3}$
21	$-6 > x - 10 + 6x + 4$	$x < 0$
22	$2x + 5 - 4x < 4 + 3x$	$x > \frac{1}{5}$
23	$4x - 6 + x \leq 5x - 8 + 2x$	$x \geq 1$
24	$-2 + 3x - 5x \geq x + 6 - 4x$	$x \geq 8$
25	$9x - 5 > 4x + 5x$	$\emptyset$
26	$6(x + 2) + 3 \leq 18$	$x \leq \frac{1}{2}$
27	$4(5 - 2x) < 6 - x$	$x > 2$
28	$-2(x - 1) - 4x < -3 + 3x$	$x > \frac{5}{9}$
29	$2(x - 1) + 3(x - 2) < -7$	$x < \frac{1}{5}$
30	$4(x - 3) + 2x > 2(x + 5) - 3 + 3x$	$x > 19$
31	$(x + 5)(x + 3) \geq (x + 9)(x + 1)$	$x \leq 3$

32	$4(x + 2) + 3(x - 2) > 2(x - 3) + 4$	$x > -\frac{4}{5}$
33	$x - 4(x + 2) \leq 2x - [x - (3 - 4x)]$	R
34	$5x + 9(2 - x) > 3(x + 1) - 4(2 + x) - 3x$	R
35	$11x - 12 - 8(4x - 5) > 7(x + 4) - x - 12$	$x < \frac{4}{9}$
36	$4(x^2 - 49) + 61 \geq (2x - 5)^2$	$x \geq 8$
37	$2(x + 1)^2 - x > 2x^2 - 3x + 4 - 5(x - 3)$	$x > \frac{17}{11}$
38	$4(2x - 7) - 3x + 8(3 - x) > 9x - 4(3x - 1) + 20$	$\emptyset$
38	$8x - 4[x - 3(x - 1)] < 11[3x - 4(2x + 1)] + 3$	$x < -\frac{29}{71}$
risolvere le seguenti disequazioni di primo grado con coefficienti frazionari		
40	$\frac{3}{4}x \geq 2$	$x \geq \frac{8}{3}$
41	$5 \leq -\frac{4}{5}x$	$x \leq -\frac{25}{4}$
42	$-\frac{2}{3} < \frac{3}{4}x$	$x > -\frac{8}{9}$
43	$-\frac{5}{2}x > \frac{7}{3}$	$x < -\frac{14}{15}$
44	$6 - \frac{3}{4}x > \frac{8}{3}$	$x < \frac{40}{9}$
45	$\frac{2}{3}x + \frac{5}{2} \leq \frac{1}{6}x$	$x \leq -5$
46	$6 + \frac{3}{4} < \frac{5}{2}x - \frac{1}{8}$	$x > \frac{11}{4}$

47	$\frac{3x-1}{2} \leq \frac{1}{3}$	$x \leq \frac{5}{9}$
48	$\frac{6x-1}{8} > 1$	$x > \frac{3}{2}$
49	$\frac{3-x}{2} + \frac{1}{4} > \frac{2(x+4)}{4}$	$x < -\frac{1}{4}$
50	$\frac{5-x}{7} > \frac{2-x}{14}$	$x < 8$
51	$\frac{x+2}{3} - \frac{1-x}{6} > \frac{1}{2}$	$x > 0$
52	$\frac{x+2}{2} - 2x \geq \frac{4x+3}{3} - x$	$x \leq 0$
53	$3x-1 > \frac{9x+8}{3}$	$\emptyset$
54	$\frac{3x-7}{8} - \frac{x+5}{4} \geq \frac{x}{3} - 4$	$x \leq 9$
55	$2x - \frac{x-1}{2} - \frac{2x-4}{3} \geq x-1$	$x \leq 17$
56	$\frac{2x+1}{3} - \frac{x-1}{2} < 0$	$x < -5$
57	$x + \frac{1-x}{3} > 2x-1$	$x < 1$
58	$\frac{7x-1}{2} > -\frac{2x+1}{4}$	$x > \frac{1}{16}$
59	$\frac{1}{2}x - 2 \leq 3x - 1$	$x \geq -\frac{2}{5}$
60	$\frac{3}{10}x - 2 > \frac{x}{5} - \frac{1}{2}$	$x > 15$

61	$\frac{x-1}{2} - \frac{1}{3} > 2x - 3$	$x < \frac{13}{9}$
62	$3(x-1) - 1 < \frac{x-2}{3} - \left(x - \frac{x-1}{3}\right)$	$x < \frac{9}{10}$
63	$-x - \frac{1}{2} + \frac{x+1}{2} > 0$	$x < 0$
64	$\frac{3}{4}x - \frac{3}{2} + \frac{5}{4} < \frac{6x+2}{3} - 2$	$x > \frac{13}{15}$
65	$\frac{x-3}{5} - 1 > 2x - \frac{x}{5} + \frac{8}{5}$	$x < -2$
66	$\frac{1}{2}x + 5 > \frac{3x-4}{2} + 6 - x$	R
67	$\frac{3x-5}{2} + \frac{x-3}{3} - 2 \geq \frac{x+1}{3} - \frac{48}{9}$	$x \geq \frac{1}{3}$
68	$\frac{1-x}{2} - \frac{5-3x}{3} < 0$	$x < \frac{7}{3}$
69	$3x + \frac{3}{2} - x > \frac{x+1}{2}$	$x > -\frac{2}{3}$
70	$4x - 3 < -\frac{2}{3}x + 3$	$x < \frac{9}{7}$
71	$6x + 7 > \frac{1}{3}(9x - 3)$	$x > -\frac{8}{3}$
72	$\frac{x-1}{3} - x < \frac{2x+3}{2}$	$x > -\frac{11}{10}$
73	$\frac{4x-3}{3} - \left(2x - \frac{3}{2}\right) + 4x > 2x - \frac{1}{2}$	$x > -\frac{3}{4}$
74	$\frac{x+5}{2} - 1 \geq \frac{x+2}{3}$	$x \geq -5$

75	$\frac{6x+5}{3} - 1 < \frac{4x-1}{2}$	$\emptyset$
76	$1 - \frac{7-3x}{5} - \frac{x+1}{2} \geq -\frac{6}{5}$	$x \geq -3$
77	$\frac{x}{5} - \frac{3x-1}{6} > \frac{1}{3} - \frac{1}{2}\left(\frac{x}{4} + \frac{3}{5}\right)$	$x < \frac{16}{21}$
78	$\frac{2x-5}{3} + \frac{3-x}{5} \geq \frac{34}{15}$	$x \geq \frac{50}{7}$
79	$\frac{x}{3} - \frac{1}{2}\left(x + \frac{2}{3}\right) < \frac{1}{3} - 2\left(x + \frac{1}{3}\right)$	$x < 0$
80	$\frac{1}{2}x - \frac{1}{3}x + \frac{2}{3}(x-4) \geq -1 + x$	$x \leq -10$
81	$2 + \frac{9-x}{6} - \frac{x}{5} \leq \frac{1+3x}{15} - \frac{x}{5} + \frac{2}{15}$	$x \geq 9$
82	$\frac{2x-3}{3} + \frac{5x+12}{4} \geq \frac{3}{2}x + 1$	$x \geq -\frac{12}{5}$
83	$\frac{3x-1}{4} + \frac{5-x}{2} \leq x + \frac{2}{3} - \frac{1+2x}{4} + \frac{11}{6}$	$x \geq 0$
84	$\frac{2x-3}{4} - \frac{3-x}{6} > \frac{5x-1}{6} - \frac{3+x}{24} - \frac{1}{6}$	$x < -\frac{19}{3}$
85	$2x - \frac{3}{2}\left(x - \frac{1}{4}\right) \geq 11x - \frac{11}{8}(6x-1)$	$x \leq -\frac{4}{9}$
86	$\left(x - \frac{1}{3}\right)\left(x + \frac{2}{5}\right) - (x-2)(x+3) < \frac{4}{15}$	$x > 6$
87	$\left(x - \frac{5}{2}\right)\left(x + \frac{3}{2}\right) - (x-5)(x+3) \geq \frac{39}{4}$	$x \geq -\frac{3}{2}$
88	$2x - \frac{2}{9} + \frac{1}{3}(2x-3) + 2(x-3) \leq \left(2x + \frac{1}{3}\right) - 3x + 2$	$x \leq \frac{86}{51}$

89	$\frac{5(x-1)}{6} - \frac{3}{4}x > \frac{2x-1}{6} + \frac{1}{12}$	$x < -3$
90	$\frac{2x-3}{2} - \frac{3-x}{3} + 2x + \frac{1}{3} > \frac{2x-1}{4} - \frac{1}{6} + x$	$x > \frac{21}{22}$
91	$-2x - 3 + \frac{11}{5} + \frac{x-3}{2} \geq \frac{3-x}{10} - x + \frac{2}{5}$	$x \leq -\frac{15}{2}$
92	$\frac{3}{4}(2x-3) + 2 - \frac{3-2x}{12} + \frac{2}{3}x > x + \frac{x-5}{2} + 2x$	$x < \frac{12}{7}$
93	$\frac{x+\frac{1}{2}}{4} - \frac{\frac{3}{4}x-3}{2} + \frac{1-x}{4} < -\frac{5}{4}$	$x > \frac{25}{3}$
94	$\frac{3(x-2)}{4} + \frac{5}{6}x < \frac{3x-1}{8}$	$x < \frac{33}{29}$
95	$\left(x - \frac{1}{2}\right)\left(x + \frac{1}{2}\right) - \frac{1}{4} \leq \frac{1+2x^2}{2} - \frac{5}{4} + \frac{3x-1}{2}$	$x \geq \frac{1}{2}$
96	$2x + \left(x - \frac{1}{4}\right)^2 < \left(x - \frac{1}{4}\right) + \frac{x}{2} - \frac{x-1}{2}$	$-\frac{3}{4} < x < \frac{1}{4}$
97	$\frac{1}{4}\left(2x - \frac{1}{4}\right)^2 - x\left(x - \frac{1}{8}\right) + 3x < \frac{3}{2}x + \frac{3}{16}$	$x < \frac{1}{8}$
98	$\frac{4x-3}{3} - \left(2x - \frac{3}{2}\right) + 4x > 2x - \frac{1}{2}$	$x > -\frac{3}{4}$
99	$\left(\frac{2}{3}x - \frac{1}{4}\right)\left(\frac{3}{2}x - 2\right) + \frac{3}{48} \geq \left(x - \frac{1}{2}\right)^2 - \frac{1}{24}$	$x \leq \frac{1}{2}$
100	$\left(x + \frac{1}{2}\right)\left(x - \frac{1}{3}\right) + x + \frac{1}{6} > \left(x - \frac{1}{3}\right)\left(x + \frac{1}{3}\right) + \frac{1}{9}$	$x > 0$
101	$\frac{5}{7}x - \frac{13}{21} + \frac{x}{15} > \frac{9}{25} - \frac{2}{35}x$	$x > \frac{257}{220}$

102	$\frac{2+3x}{4} - 1 > \frac{x-2}{3}$	$x > -\frac{2}{5}$
esercizi più impegnativi		
103	$-1,2x - \frac{2x-3,4}{1-0,4} < 4x - \frac{20,3x-0,6}{0,9}$	$x > \frac{235}{374}$
104	$\left(\frac{x}{4} + 1\right)^2 - \frac{x}{2}(x+4) + \frac{7}{16}x^2 \leq \frac{3}{2}(x+4) + 7$	$x \geq -4$
105	$\left(\frac{x}{2} + 1\right)^2 - 3\left(\frac{x}{2} + 1\right) + \frac{2}{5}x - 5 \geq -\frac{34}{5} + \frac{x^2}{4}$	$x \leq -2$
106	$\frac{2x+\frac{1}{3}}{3} - \frac{3\left(\frac{1}{3}+x\right)}{2} \geq -\frac{2}{3}$	$x \leq \frac{1}{3}$
107	$\frac{x}{3} - \left\{ -\frac{x}{2} - \left[\frac{x-1}{3} - \left(\frac{x+1}{2} - \frac{2x}{3} \right) \right] \right\} \leq 0$	$x \leq \frac{5}{8}$
108	$-\frac{x+5}{15} + \frac{2}{3} - \frac{x+1}{3} \geq -\frac{4x-5}{15} - \frac{x}{3} - \frac{1}{3}$	$x \geq 0$
109	$\frac{1}{2}\left(\frac{7x-1}{4} + \frac{2x-3}{2}\right) \geq 5x\left(x - \frac{1}{5}\right) - 5x^2 + \frac{3}{2}$	$x \geq 1$
110	$\frac{2}{3}\left(x-2 - \frac{x-1}{2}\right) \geq 1 - \frac{2}{3}x - \frac{2}{3}\left(x - \frac{x}{2}\right) + 2\left(\frac{2}{3}x - 1\right)$	R
111	$\frac{5}{2}x + \frac{2x-2}{3} - \frac{1-x}{3} - \left(\frac{3x-1}{2} + 2x\right) \geq \frac{3}{2}$	$\emptyset$
112	$\frac{3}{2}\left(x + \frac{1}{2}\right) > 2\left(x + \frac{1}{2}\right) - \frac{1}{2}\left(x - \frac{1}{2}\right)$	$\emptyset$
113	$\left(x + \frac{1}{2}\right)\left(x - \frac{1}{3}\right) + x + \frac{1}{6} > \left(x - \frac{1}{3}\right)\left(x + \frac{1}{3}\right) + \frac{1}{9}$	$x > 0$

114	$\frac{x + \frac{2}{3}}{2} - \frac{x - \frac{1}{2}}{3} - 2x > \frac{x - 8}{6} - \frac{15x}{8} + \frac{5}{6}$	$x < 8$
115	$\frac{1}{5}(x - 2) - \left[1 + 2x - \left(x + \frac{1}{2}\right)\right] \leq 1$	$x \geq -\frac{19}{8}$
116	$\frac{x}{3}\left(\frac{1}{2} - x\right) \leq 2 - 5x - \left\{-\frac{x}{3} + \left[2 - \frac{x}{3}(3 - x)\right]\right\}$	$x \leq 0$
117	$\frac{1}{3}\left(x + \frac{1}{2}\right) - \left[-2x + \left(x - \frac{1}{2}\right)\right] < 0$	$x < -\frac{1}{2}$
118	$3\left[(x + 3) + \frac{1}{3}x\right] < 7x$	$x > 3$
119	$\frac{2}{3}\left(\frac{1}{2} + x\right) - \left[x + \left(\frac{1}{2} - x\right)\right] < 0$	$x < \frac{1}{4}$
120	$\frac{(x + 1)^2}{3} + \frac{(x + 1)(x - 1)}{2} - 3x \geq \frac{3}{2}(x + 1)^2 - \frac{2x^2 - 11}{3}$	$x \leq -1$
121	$\frac{3}{2} - \frac{x - 0,5}{2} + \frac{(2x - 1)^2}{3} \leq \frac{4}{3}\left(x^2 - \frac{1}{4}\right) + \frac{3}{2}$	$x \geq \frac{1}{2}$
122	$\frac{3x - 0,3}{2} + \frac{x + 0,6}{4} > 1$	$x > \frac{4}{7}$
123	$-\frac{2 - 3x}{2} + 1 - \frac{3}{4}x - \frac{2x + 1}{6} < -\frac{5 + x}{2} + \frac{2 - 3x}{2} + x$	$x < -\frac{16}{17}$
124	$3x - \frac{2}{3} - \frac{x - \frac{2}{3}}{3} + \frac{2x - 3}{12} > \frac{\frac{3}{2} - x}{6} - \frac{5}{3} - x + \frac{1 + 2x}{2} + 2\left(x - \frac{1}{6}\right)$	$x > -\frac{5}{9}$
125	$3\left(\frac{3 - 3x}{9} - \frac{5 - 2x}{9} - \frac{1 - x}{3}\right) \geq 2x - 3 - \frac{5x - 3}{3} + \left(4 - \frac{x}{3}\right) - \frac{2}{3}x$	$x \geq \frac{11}{4}$
126	$7x - (x + 1)^2 - \frac{5 - 3x}{2} < \frac{3x - 2}{4} - (x - 3)^2 - \frac{3x + 2}{2} + 5x - 3$	$x > \frac{8}{3}$

127	$2\left(1 - \frac{x}{4}\right) + x - \frac{3x-2}{4} - \left[4\left(2x - \frac{1}{2}\right) - \frac{2-3x}{2}\right] + (3-x)^2 < (x-3)^2 - \frac{x}{2}$	$x > \frac{22}{37}$
128	$\frac{1}{3}x + \frac{30x+1}{6} - 2x - 3\left(\frac{x-3}{9} + 4x\right) < -\frac{3+2x}{6} + 1 - \frac{7x-\frac{1}{2}}{3}$	$x > \frac{3}{38}$
129	$5x + \frac{1}{3} - 2\left[\frac{x-3}{4} + \frac{3(3x-1)}{2} - \frac{1}{4}(1-2x)\right] - \frac{3x-2}{9} > 5 - 2x - \frac{2}{3}$	$x < \frac{22}{69}$
130	$\frac{x+2}{2} - \frac{1}{4} + \frac{3x-2}{6} + \frac{1}{4}(1-2x) - 4x + \frac{1}{6} < \frac{2-4x}{3} + 2 - 3x$	$x < \frac{11}{5}$
131	$\frac{2x-\frac{1}{2}}{3} + \frac{2x-3}{\frac{1}{2}} - \frac{37}{6} \leq 0$	$x \leq \frac{37}{14}$
132	$\frac{x-\frac{5}{7}}{\frac{5}{7}} + \frac{x-2}{2} \geq \frac{5}{7}$	$x \geq \frac{10}{7}$
133	$\frac{\frac{2}{3} + \frac{1}{2} - x}{\frac{2}{3}} + \frac{\frac{2}{3} - x}{\frac{1}{2}} \geq \frac{\frac{1}{2} - x}{\frac{2}{3}} + \frac{\frac{2}{3} - \frac{1}{2}}{\frac{1}{2}}$	$x \leq 1$
134	$\frac{x-\frac{4}{3}}{\frac{8}{3}} + \frac{x+\frac{1}{4}}{-\frac{1}{2}} \leq \left(x - \frac{4}{3}\right)\left(x + \frac{1}{2}\right) + \frac{5}{6}x - x^2$	$x \geq -\frac{8}{39}$
135	$\frac{x+4}{8} - \frac{x-\frac{2}{3}}{\frac{2}{3}-1} \leq \frac{-\frac{1}{3}+4x}{8}$	$x \leq \frac{5}{9}$
136	$\frac{5x-1}{1+\frac{1}{2}} < \frac{2x-1}{3}$	$x < \frac{1}{8}$

137	$\frac{\frac{x}{2} + \frac{x}{3}}{\frac{1}{2}} - \frac{\frac{x}{2} - \frac{x}{3}}{\frac{1}{5}} + x < 2x - \frac{1}{7}(x+3) + \frac{9}{7} - \frac{x}{6}$	$x < 6$
138	$\frac{4x}{9} - \frac{\left(1 + \frac{1}{4}\right)2x}{\frac{3}{2}} + \left(x - \frac{1}{3}\right)^2 \leq \frac{25}{9} - \frac{4}{9}x\left(1 - \frac{9}{4}x\right)$	$x \geq -\frac{24}{13}$
139	$\frac{\frac{x}{2} - 1}{\frac{1}{2} + 2} + \frac{\frac{x}{2} + 1}{\frac{1}{2} + 2} \leq x - \frac{1}{15}$	$x \geq \frac{1}{9}$
140	$9x + 20 \geq \left[\frac{29}{4} - 6(x-1) + 9x - \frac{9}{4}\right]$	$x \geq -\frac{3}{2}$
141	$\frac{3}{2} - \frac{x-0,5}{2} + \frac{(2x-1)^2}{3} \leq \frac{4}{3}\left(x^2 - \frac{1}{4}\right) + \frac{3}{2}$	$x \geq \frac{1}{2}$
142	$(7x-2)^2 - 7\left(x - \frac{2}{7}\right)(7x+1) + \frac{x}{2} > 3(7x-2) + \frac{1}{7}$	$x < \frac{2}{7}$
143	$\left(\frac{x}{5} + 1\right)(1-5x) + (x+5)^2 - \frac{3}{5}x < 3$	$x < -5$
144	$\frac{1}{4}\left(2x - \frac{1}{4}\right)^2 - x\left(x - \frac{1}{8}\right) + 3x < \frac{3x}{2} + \frac{3}{16}$	$x < \frac{1}{8}$
145	$\left(x + \frac{4}{3}\right)^2 - x\left(x + \frac{4}{3}\right) + 2x \geq 3\left(x + \frac{4}{3}\right) - \frac{8}{3}$	$x \geq -\frac{4}{3}$
146	$\left(x - \frac{4}{3}\right)^2 - x\left(x + \frac{5}{3}\right) + \frac{x}{2} \leq 3\left(x - \frac{4}{3}\right) + \frac{x-8}{2}$	$x \geq \frac{4}{3}$

147	$\left(-x - \frac{1}{3}\right)^2 + (3x + 1)^2 - \frac{x}{2} + \frac{1}{6} \geq 10x(x - 1) - \frac{37}{9}$	$x \geq -\frac{1}{3}$
148	$2x + \left(x - \frac{1}{4}\right)^2 < \left(x + \frac{1}{4}\right)^2 + \frac{x}{2} - \frac{x - 1}{2}$	$x < \frac{1}{2}$
149	$\left(\frac{2x}{3} - \frac{1}{4}\right)\left(\frac{3}{2}x - 2\right) + \frac{3}{48} \geq \left(x - \frac{1}{2}\right)^2 - \frac{1}{24}$	$x \leq \frac{1}{2}$
150	$\left(\frac{x}{2} + 1\right)^2 - \left(\frac{x}{2} + 1\right) + \frac{2x}{5} - 5 \geq -\frac{34}{5} + \frac{x^2}{4}$	$x \geq -2$
151	$\left(x - \frac{5}{3}\right)^2 + 2x\left(x - \frac{5}{3}\right) \geq 3\left(x - \frac{5}{3}\right)\left(x + \frac{5}{3}\right)$	$x \leq \frac{5}{3}$