

Find the intersection of each of the following pairs of lines using any method:

1.  $-2x - (-7)y = -15$ ,  $y = \frac{6}{23}x + \frac{-4}{23}$
2.  $-x + (-5)y = 15$ ,  $y = \frac{-3}{11}x + \frac{7}{11}$
3.  $y = \frac{-3}{2}x + \frac{-5}{2}$ ,  $6x + 3y = -7$
4.  $-5x - 3y = 8$ ,  $y = -2x + \frac{2}{3}$
5.  $x - (-3)y = -4$ ,  $x = \frac{-18}{7}y + \frac{-9}{7}$
6.  $y = x + 15$ ,  $y = \frac{-1}{4}x + \frac{7}{2}$
7.  $x = -4y + 9$ ,  $y = \frac{-5}{18}x + \frac{-1}{9}$
8.  $x = \frac{1}{7}y + \frac{-13}{7}$ ,  $y = 6x - 6$
9.  $x = -2y + \frac{10}{3}$ ,  $y = \frac{-6}{13}x + \frac{-9}{13}$
10.  $x = \frac{-2}{3}y + \frac{2}{3}$ ,  $y = -x + \frac{4}{5}$
11.  $x = -10y + 1$ ,  $-2x - 20y = -2$
12.  $x - 4y = 5$ ,  $x = \frac{13}{3}y + \frac{10}{3}$
13.  $y = \frac{7}{4}x - 1$ ,  $y = \frac{3}{2}x + \frac{7}{2}$
14.  $-x + 7y = 5$ ,  $7x - 53y = 15$
15.  $y = -5x - 7$ ,  $y = -7x - 4$
16.  $x - (-6)y = 8$ ,  $x = \frac{-21}{4}y + \frac{5}{2}$
17.  $y = \frac{-3}{4}x - 2$ ,  $y = \frac{-3}{4}x$
18.  $y = \frac{6}{5}x + \frac{2}{5}$ ,  $4x - 3y = 10$
19.  $y = \frac{-6}{7}x + \frac{1}{7}$ ,  $2x + 3y = -10$
20.  $x = 2y + 9$ ,  $x = \frac{11}{6}y + \frac{13}{6}$
21.  $y = \frac{-9}{5}x + \frac{-2}{5}$ ,  $y = \frac{-9}{5}x + \frac{-2}{5}$
22.  $2x - (-4)y = -3$ ,  $x = \frac{-11}{5}y + \frac{13}{5}$
23.  $-x + 3y = -15$ ,  $y = \frac{7}{16}x + \frac{3}{8}$
24.  $y = \frac{2}{7}x + \frac{9}{7}$ ,  $y = \frac{5}{17}x + \frac{-5}{17}$
25.  $y = \frac{-3}{7}x - 1$ ,  $x = \frac{-7}{3}y + \frac{-7}{3}$
26.  $y = \frac{-2}{3}x - 3$ ,  $3x - (-5)y = -6$
27.  $x + y = -8$ ,  $x = \frac{-4}{3}y + 2$
28.  $y = \frac{-2}{3}x + \frac{-5}{3}$ ,  $x = \frac{-7}{5}y - 1$
29.  $x = 3y + 5$ ,  $x = \frac{7}{2}y - 6$
30.  $x = \frac{5}{2}y - 3$ ,  $4x + (-10)y = -12$
31.  $y = \frac{3}{2}x + \frac{5}{4}$ ,  $y = 2x + 3$
32.  $x = -y + \frac{6}{5}$ ,  $x = \frac{-7}{6}y + \frac{-1}{3}$
33.  $y = \frac{-1}{2}x + \frac{-5}{2}$ ,  $y = \frac{-3}{4}x + \frac{1}{2}$
34.  $3x + 5y = -4$ ,  $x = \frac{-5}{3}y + \frac{16}{15}$
35.  $x = -3y - 5$ ,  $x = \frac{-3}{2}y + 1$
36.  $4x + 7y = -10$ ,  $-5x - 8y = 7$
37.  $x = \frac{2}{3}y + \frac{10}{3}$ ,  $x = \frac{2}{5}y + \frac{-11}{5}$
38.  $-x - 4y = -5$ ,  $y = \frac{-1}{3}x - 2$
39.  $y = -x - 4$ ,  $7x - (-8)y = -5$
40.  $x = \frac{9}{2}y + \frac{7}{2}$ ,  $8x - 36y = 15$
41.  $x = y + 3$ ,  $x = 3y + 7$
42.  $-x - y = -14$ ,  $y = \frac{-3}{2}x + \frac{-7}{2}$
43.  $x = -2y + 5$ ,  $y = -x + \frac{-3}{2}$
44.  $x = -4y + 15$ ,  $y = \frac{-2}{13}x + \frac{-10}{13}$
45.  $x = 2y - 4$ ,  $y = \frac{7}{12}x + \frac{-1}{4}$
46.  $x + 3y = -2$ ,  $y = \frac{-3}{7}x + \frac{6}{7}$
47.  $y = \frac{-1}{3}x + \frac{13}{3}$ ,  $2x - (-3)y = 12$
48.  $-x + 2y = 13$ ,  $y = \frac{3}{2}x + 7$
49.  $x = \frac{-5}{3}y + \frac{1}{3}$ ,  $y = \frac{-3}{5}x + \frac{-3}{5}$
50.  $x = \frac{5}{3}y + \frac{-14}{3}$ ,  $x = 2y + \frac{-11}{5}$
51.  $-2x + y = 1$ ,  $5x + (-3)y = -14$
52.  $8x - (-4)y = 20$ ,  $y = -2x + \frac{-3}{2}$
53.  $x = -2y + 7$ ,  $y = \frac{-1}{2}x + \frac{7}{2}$
54.  $x = 6y + 10$ ,  $-x - (-8)y = 1$

55.  $x = -3y + 4, 7x - (-19)y = -3$

56.  $-x - 4y = 11, -x + (-5)y = 14$

57.  $x = -7y + 13, y = \frac{-5}{38}x + \frac{-3}{38}$

58.  $-3x - 2y = -5, y = -4x + 6$

59.  $y = -2x + -5, y = -4x + -11$

60.  $7x - (-2)y = 2, y = -x + -6$

61.  $x = -3y + -7, 4x - (-8)y = 5$

62.  $y = \frac{-6}{7}x + \frac{-1}{7}, x = \frac{-7}{6}y + \frac{-1}{6}$

63.  $-5x - (-6)y = -8, x = y + -11$

64.  $y = \frac{-1}{3}x + \frac{-5}{3}, 6x + 23y = 2$

65.  $y = \frac{-7}{6}x + \frac{-1}{3}, x = \frac{-6}{7}y + \frac{-1}{7}$

66.  $y = x + 15, x = \frac{11}{6}y + \frac{-7}{3}$

67.  $y = \frac{-1}{3}x + -4, y = \frac{-5}{17}x + \frac{13}{17}$

68.  $x = -6y + -1, x = -7y + 3$

69.  $y = \frac{-5}{4}x + \frac{-1}{4}, 3x - (-2)y = -10$

70.  $x = \frac{5}{6}y + \frac{3}{2}, 5x + (-4)y = -12$

71.  $y = \frac{5}{3}x + \frac{-7}{3}, x = \frac{2}{3}y + 2$

72.  $x = \frac{-6}{7}y + -1, y = \frac{-7}{6}x + \frac{-7}{6}$

73.  $-5x - (-5)y = 12, -2x + y = 6$

74.  $x = -4y + 5, x = \frac{-27}{7}y + \frac{-15}{7}$

75.  $y = \frac{-6}{7}x + \frac{-8}{7}, -30x - 35y = 40$

76.  $-2x - (-3)y = 9, y = \frac{7}{12}x + -1$

77.  $-2x + 3y = 14, x = \frac{7}{5}y + \frac{-12}{5}$

78.  $x + 7y = -6, y = \frac{-1}{8}x + \frac{-13}{40}$

79.  $x = -5y + -9, y = \frac{-3}{16}x + \frac{5}{32}$

80.  $y = x + 13, -7x + 5y = 13$

81.  $y = \frac{1}{3}x + \frac{14}{3}, -6x - (-20)y = -14$

82.  $y = 5x + -7, x = \frac{1}{2}y + 5$

83.  $y = \frac{1}{2}x + \frac{-7}{2}, y = \frac{5}{8}x + \frac{15}{8}$

84.  $x = \frac{-7}{2}y + \frac{-5}{2}, x = \frac{-23}{7}y + -2$

85.  $x = \frac{7}{2}y + \frac{3}{2}, -5x - (-16)y = -7$

86.  $x + 5y = 8, 5x + 30y = 8$

87.  $x = \frac{-1}{2}y + \frac{15}{2}, y = \frac{-3}{4}x + \frac{-1}{2}$

88.  $y = -x + -3, y = \frac{-3}{7}x + \frac{-8}{7}$

89.  $2x - (-3)y = 9, x = -2y + 8$

90.  $x = \frac{4}{3}y + \frac{8}{3}, x = \frac{6}{5}y + \frac{14}{5}$

91.  $2x - 6y = -3, x = \frac{5}{2}y + 3$

92.  $2x + (-4)y = -8, -2x - (-6)y = -12$

93.  $-5x + 2y = 9, x = y + 10$

94.  $x = \frac{-7}{6}y, y = \frac{-6}{7}x$

95.  $-7x - 4y = -5, x = \frac{-2}{3}y + 2$

96.  $y = \frac{4}{3}x + \frac{-1}{3}, x = \frac{2}{3}y + \frac{-4}{3}$

97.  $y = 2x + 12, x = \frac{3}{4}y + \frac{5}{2}$

98.  $y = \frac{2}{3}x + -2, -6x - (-10)y = -8$

99.  $5x + 2y = 9, y = \frac{-7}{3}x + -3$

100.  $x = \frac{3}{2}y + \frac{3}{2}, 7x - 11y = -7$

Solutions:

1.  $x = \frac{317}{4}, y = \frac{41}{2}$
2.  $x = 50, y = -13$
3.  $x = \frac{1}{3}, y = -3$
4.  $x = 10, y = \frac{-58}{3}$
5.  $x = 15, y = \frac{-19}{3}$
6.  $x = \frac{-46}{5}, y = \frac{29}{5}$
7.  $x = -85, y = \frac{47}{2}$
8.  $x = -19, y = -120$
9.  $x = \frac{184}{3}, y = -29$
10.  $x = \frac{2}{5}, y = \frac{2}{5}$
11. The Entire Line
12.  $x = 25, y = 5$
13.  $x = 18, y = \frac{61}{2}$
14.  $x = \frac{-185}{2}, y = \frac{-25}{2}$
15.  $x = \frac{3}{2}, y = \frac{-29}{2}$
16.  $x = -36, y = \frac{22}{3}$
17. None. They are parallel.
18.  $x = 28, y = 34$
19.  $x = \frac{73}{4}, y = \frac{-31}{2}$
20.  $x = -73, y = -41$
21. The Entire Line
22.  $x = \frac{-85}{2}, y = \frac{41}{2}$
23.  $x = \frac{-258}{5}, y = \frac{-111}{5}$
24.  $x = 188, y = 55$
25. The Entire Line
26.  $x = -27, y = 15$
27.  $x = -38, y = 30$
28.  $x = 20, y = -15$
29.  $x = 71, y = 22$
30. The Entire Line
31.  $x = \frac{-7}{2}, y = -4$
32.  $x = \frac{52}{5}, y = \frac{-46}{5}$
33.  $x = 12, y = \frac{-17}{2}$
34. None. They are parallel.
35.  $x = 7, y = -4$
36.  $x = \frac{31}{3}, y = \frac{-22}{3}$
37.  $x = \frac{-21}{2}, y = \frac{-83}{4}$
38.  $x = -39, y = 11$
39.  $x = -27, y = 23$
40. None. They are parallel.
41.  $x = 1, y = -2$
42.  $x = -35, y = 49$
43.  $x = -8, y = \frac{13}{2}$
44.  $x = 47, y = -8$
45.  $x = 27, y = \frac{31}{2}$
46.  $x = 16, y = -6$
47.  $x = -1, y = \frac{14}{3}$
48.  $x = \frac{-1}{2}, y = \frac{25}{4}$
49. None. They are parallel.
50.  $x = -17, y = \frac{-37}{5}$
51.  $x = 11, y = 23$
52. None. They are parallel.
53. The Entire Line
54.  $x = 43, y = \frac{11}{2}$
55.  $x = \frac{-85}{2}, y = \frac{31}{2}$
56.  $x = 1, y = -3$
57.  $x = \frac{515}{3}, y = \frac{-68}{3}$
58.  $x = \frac{7}{5}, y = \frac{2}{5}$
59.  $x = -3, y = 1$
60.  $x = \frac{14}{5}, y = \frac{-44}{5}$
61.  $x = \frac{71}{4}, y = \frac{-33}{4}$
62. The Entire Line
63.  $x = -74, y = -63$
64.  $x = \frac{-121}{5}, y = \frac{32}{5}$
65. None. They are parallel.
66.  $x = \frac{-151}{5}, y = \frac{-76}{5}$
67.  $x = \frac{-243}{2}, y = \frac{73}{2}$
68.  $x = -25, y = 4$
69.  $x = -19, y = \frac{47}{2}$
70.  $x = -96, y = -117$
71.  $x = -4, y = -9$
72. The Entire Line
73.  $x = \frac{-18}{5}, y = \frac{-6}{5}$
74.  $x = -195, y = 50$
75. The Entire Line
76.  $x = -48, y = -29$
77.  $x = 62, y = 46$
78.  $x = \frac{-149}{5}, y = \frac{17}{5}$
79.  $x = \frac{-313}{2}, y = \frac{59}{2}$
80.  $x = 26, y = 39$
81.  $x = -161, y = -49$
82.  $x = -1, y = -12$
83.  $x = -43, y = -25$
84.  $x = \frac{17}{3}, y = \frac{-7}{3}$
85.  $x = \frac{1}{3}, y = \frac{-1}{3}$
86.  $x = 40, y = \frac{-32}{5}$
87.  $x = \frac{62}{5}, y = \frac{-49}{5}$
88.  $x = \frac{-13}{4}, y = \frac{1}{4}$
89.  $x = -6, y = 7$
90.  $x = 4, y = 1$
91.  $x = \frac{51}{2}, y = 9$
92.  $x = -24, y = -10$
93.  $x = \frac{-29}{3}, y = \frac{-59}{3}$
94. The Entire Line
95.  $x = -7, y = \frac{27}{2}$
96.  $x = -14, y = -19$
97.  $x = -23, y = -34$
98.  $x = 18, y = 10$
99.  $x = 45, y = -108$
100.  $x = 54, y = 35$