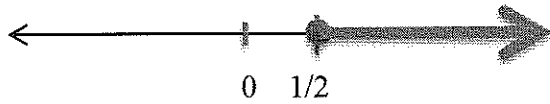


Answers:

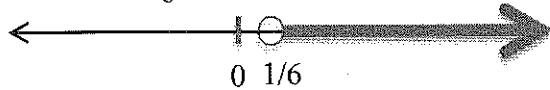
1. $y = -8$

2. $x = -4$

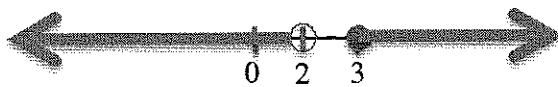
3. $x \leq -\frac{1}{2}$



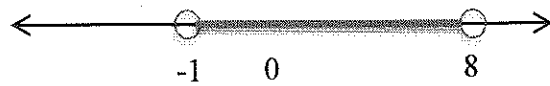
4. $x > \frac{1}{6}$



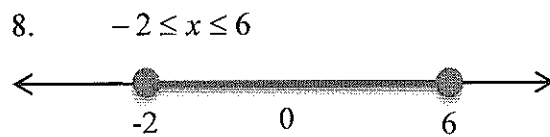
5. $x \geq 3$ or $x < 2$



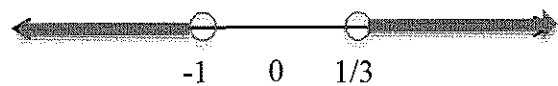
6. $-1 < x < 8$



7. $x = \frac{2}{3}$ or $x = -2$



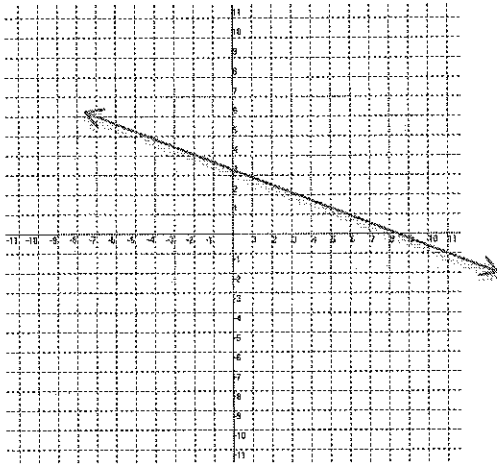
9. $x > \frac{1}{3}$ or $x < -1$



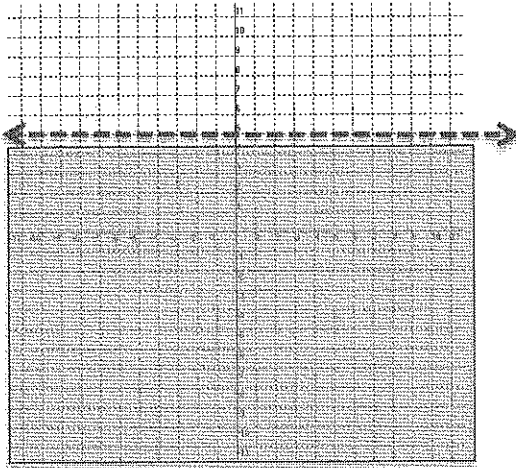
10. undefined or no slope

11. slope = 4

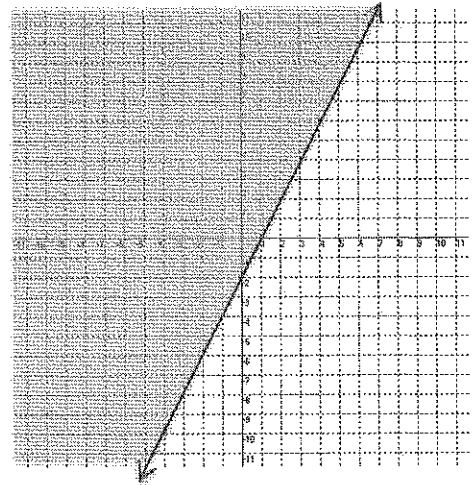
12.



13.



14.



15. $x - 2y = 0$

16. $x - y = 5$

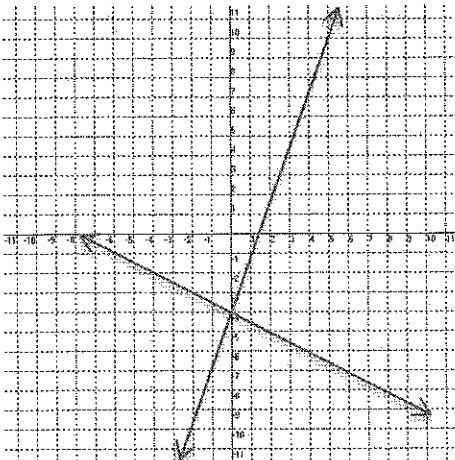
17. $x + 4y = 4$

18. $x + 3y = -3$

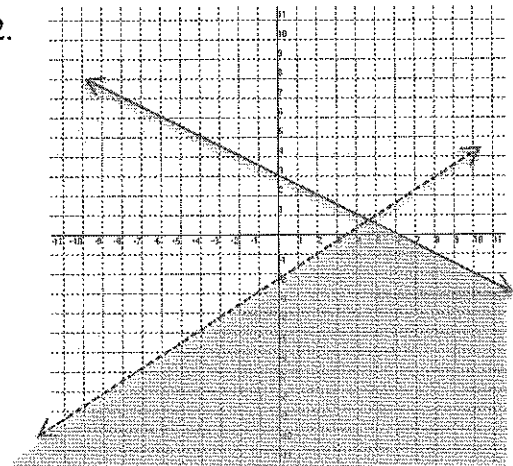
19. $(3, 7)$

20. no solution

21.



22.

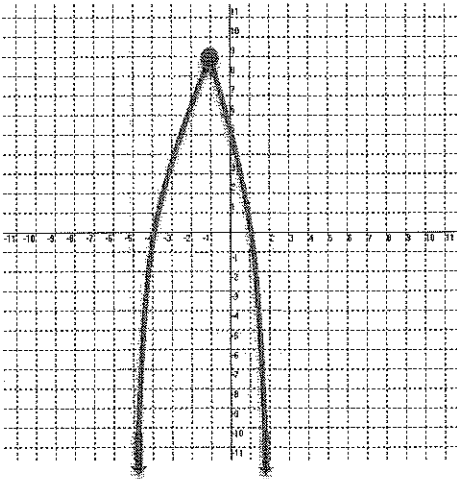


23. Range: $\{-1, 1\}$ Yes, because no x -value repeats.

24. Domain: $\{\mathbb{R}, x \neq 0\}$
25. Domain: $\{\mathbb{R}, x \leq 2\}$
26. $\begin{bmatrix} 8 & 12 \\ -7 & 9 \end{bmatrix}$
27. $\begin{bmatrix} -14 & 3 & -2 \\ -2 & 3 & 5 \end{bmatrix}$
28. not possible (b/c dimensions do not match)
29. $\begin{bmatrix} -16 & 8 & -4 \\ -6 & -2 & 10 \end{bmatrix}$
30. $-\frac{2ab}{9}$
31. a^{2x+6}
32. $y^{h^2+k^2}$
33. $\frac{2}{y^2}$
34. $\frac{q^4 r^5}{p^3}$
35. $\frac{b^4}{16a^4}$
36. $\frac{y^9}{8x^7}$
37. $2x^2y(7x^3y^2z + 5 - xz^2)$
38. $(c - 2d)(c + 2d)$
39. $(6a + 7b)(6a - 7b)$
40. $(x - 6)(x^2 + 6x + 36)$
41. $(2k + 5)^2$
42. $(5j - 8)^2$
43. $(5x + 3)(x + 2)$
44. $(x - 6y)(x - 4y)$
45. $(x + 3)(x - 3)(x + 5)$
46. $4(5a + 3b)(5a - 3b)$
47. $(2u + 1)(4u^2 - 2u + 1)$
48. $(4x + 5y)^2$
49. $(2n + 3)(4m - 5)$
50. $(3x + 1)(2x - 3)$
51. $(x + 1)^2(x - 1)^2$
52. $16x^2(x - 4)$
53. $(2x - y^3)(2x + y^3)(4x^2 + y^6)$

54. $x = 0, x = 2$ (double root)
55. $t = -1, \frac{4}{3}$
56. $x = -1, 0, 1$
57. $\frac{x-4}{x-3}$
58. $x = 2$ D: $\{\mathbb{R}, x \neq -7, 5\}$
59. $\frac{3y^3}{2x}$
60. $\frac{2x}{x-y}$
61. $\frac{x(x-1)}{9}$
62. $\frac{-x-4}{7x+3} = -\frac{x+4}{7x+3}$
63. $\frac{7x-30}{(x-2)(x-6)(x+2)}$
64. $\frac{-x+12}{(x+4)(x-4)} = -\frac{x-12}{(x+4)(x-4)}$
65. $x = -5$
66. $x = 3$
67. $x \leq 4$
68. $\frac{4}{5}$
69. -3
70. ± 2
71. $\frac{3}{2}$
72. $-3a^5\sqrt[3]{5}$
73. $y = \pm \frac{1}{5}$
74. no solution
75. $2\sqrt[3]{35}$
76. $\frac{\sqrt[3]{28}}{2}$
77. $3\sqrt{2} - \sqrt{6}$
78. $3\sqrt{5} + 10\sqrt{3}$
79. $2 - \sqrt{2}$
80. $18 - 36\sqrt{2} + 2\sqrt{3} - 4\sqrt{6}$
81. $27 + 4\sqrt{35}$
82. $-2 - \sqrt{5}$
83. $5i\sqrt{3}$

84. $-3\sqrt{2}$
 85. -45
 86. $\frac{i\sqrt{3}}{-2}$
 87. $-14\sqrt{2}$
 88. $x = \pm 12i$
 89. $u = \pm 2i\sqrt{3}$
 90. $-18 + 11i$
 91. $-13 - 84i$
 92. $\frac{23 - 7i\sqrt{2}}{19}$
 93. $-4 \pm \sqrt{17}$
 94. discriminant = 124 \therefore 2 real irrational roots
 95. discriminant = -16 \therefore 2 imaginary roots
 96. vertex: (-1, 9), it is a max, D: $\{\mathbb{R}\}$, R: $\{\mathbb{R}, y \leq 9\}$



97. $x^2 - x - 15 - \frac{24}{x-2}$
 98. $2x^2 - 8x + 3 + \frac{1}{x+4}$
 99. $3x^2 + x + 3 + \frac{4}{x-2}$
 100. $x^3 - 2 + \frac{3}{x+5}$
 101. 25
 102. $\frac{1}{2}$
 103. -27
 104. $\frac{8}{\frac{1}{a^2}b^{\frac{3}{2}}}$
 105. $y = 25$

106. $n = 3$
107. $g(f(1)) = -52$
108. $f(g(-2)) = -1$
109. $g(f(x)) = -x^2 - 12x - 39$
110. $f^{-1}(x) = \frac{x-1}{5}$
111. $f(f^{-1}(x)) = f^{-1}(f(x)) = x \therefore$ the functions are inverses.