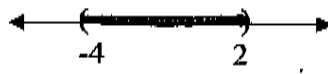
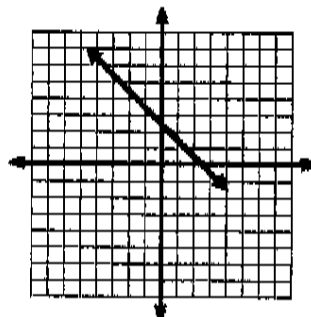
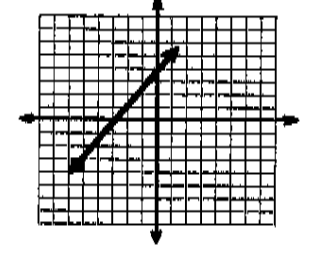


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Solutions to Math 108 Final Review

1. 2
2. $\left\{x \mid x < 3 \cup x > \frac{9}{2}\right\}; (-\infty, 3) \cup (4.5, \infty)$
3. 
4. $\frac{-5}{24}$
5. -20
6. a) $A \cup B = \{-2, 0, 1, 2, 3, 4\}$
b. $A \cap B = \{0, 2\}$
7. $-3x + 10y$
8. $x = 8$
9. $\{x \mid x \geq 4\}$
10. 11 quarters
11. \$2400
12. 140 mph
13. 11.25 miles
14. smaller 7, larger 9
15. midpoint $\left(\frac{13}{2}, -2\right)$ distance $\sqrt{13}$
16. 
17. 
18. $m = \frac{-5}{2}$
19. $\left(0, \frac{1}{2}\right)\left(\frac{1}{3}, 0\right)$
20. $y = \frac{-3}{2}x - 6$
21. $y = -x - 1$
22. $y = \frac{5}{2}x - 8$
23. a) -3
b) $t^2 - 7$
24. (-15, -29)
25. $\left(\frac{5}{7}, \frac{13}{7}\right)$
26. $(5/4, -3/4)$
27. (1, -3, 2)
28. ~~21, 0~~
29. $x^{\frac{5}{2}}$
30. $\frac{9x}{-2y^4}$
31. $\frac{b^3}{8a^6}$
32. $2a^3 - 11a^2 - 3a + 45$
33. $6a^2 + 7ab - 20b^2$
34. $(xy + 7)(xy - 7)$
35. $(x + 5)(x^2 - 5x + 25)$
36. $2x^2(3x^2 - 5)(x^2 + 4)$
37. $(y - 3x)(a - 2b)$
38. $x^2 + 3x - 4 + \frac{2}{x+1}$
39. $9x^2 - 24x + 16$
40. $\sqrt[3]{a^6 b^8}$ or $a^2 b^2 \sqrt[3]{b^2}$

41. a) $2a^2b^4\sqrt{7b}$
 b) $3x^2y\sqrt[3]{3xy^2}$

42. a) $2\sqrt{2}$
 b) $-a^2b\sqrt{ab}$

43. $-10 + \sqrt{2}$

44. $\frac{\sqrt{5a}}{2ab}$

45. $-8 + 4\sqrt{5}$

46. $2\frac{\sqrt[3]{2a^3}}{a}$

47. $4\sqrt{2} - 2i\sqrt{2}$

48. $\frac{6}{13} + \frac{4}{13}i$ 49. $31 + 3i$

50. $x = -22$ 51. $x = -3, -2$

52. $x = \frac{25}{72}$

53. $\frac{x^2}{x-2}$

54. $\frac{2x-3}{x-3}$

55. $\frac{2x^2 + 2x + 5}{(x-2)(x-1)(x+2)}$

56. $\frac{3}{x+2}$

57. $\frac{x-1}{x+3}$

58. $x = 9/2$ or 4.5

59. $\pm\sqrt{30}$

60. $R = \frac{E - Ir}{I}$

61. $A = Tn - B$

62. $2x^2 + 7x - 4 = 0$

63. $3 \pm 3\sqrt{2}$

64. $5 \pm 4\sqrt{2}$

65. $3 \pm 2\sqrt{2}$

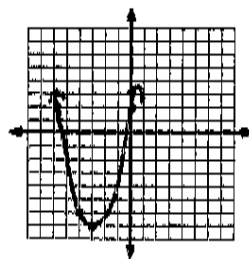
66. $x = \pm i\sqrt{2}, \pm\sqrt{3}$

67. $x = 25$ & 9

68. $\{x | x < -2 \cup x > 7\}$

69. $\left\{x \mid x < -5 \cup -2 < x \leq \frac{3}{2}\right\}$

70.



vertex: $(-3, -7)$ Domain: x is all real

axis of sym. $x = -3$ Range: $y \geq -7$

x -intercepts: $(-3 \pm \sqrt{7}, 0)$

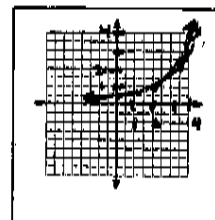
71. a) -1 b) 2 c) $h^{-1}(x) = \frac{1}{2}x - 2$

72. $f^{-1}(x) = 2x - 26$

73. $(6, 0)$ and $(-2, 0)$

74. $1/3$ 75. $x = 2$

76.



77. $x = -2$

78. $x = 6$

79. $3\log_5 x - \log_5 y - 4\log_5 z$

80. $\log_5 \sqrt[3]{\frac{x}{y^2}}$

81. 2.2266

82. a) 1.301

b) 2 c) 3

83. $x = 2$

84. 5 lumens

85. $\$80,000$