

Math 0210 Final Review

Answer Key

1. 1

2. 29

3. $12\sqrt{2}$

4. a common denominator

5. $\frac{-x-9}{(x+2)(x+3)}$

6. $4a^2 - 28ab + 49b^2$

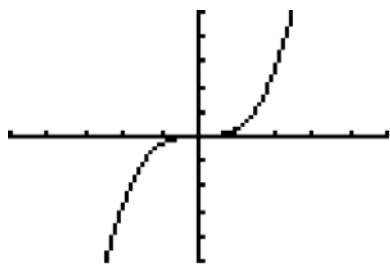
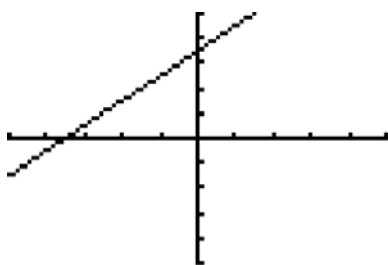
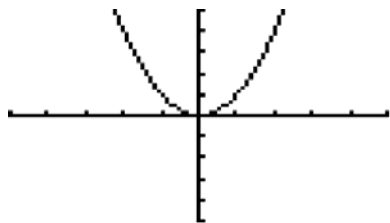
7. multiply by reciprocal

8. $\frac{15a}{4}$

9. The set of inputs for x or the set of all first elements in a set of ordered pairs.

10. For every input there is exactly one output or a set of ordered pairs in which the first coordinates never repeat.

11.



12. domain (interval notation): $(-\infty, \infty)$

range (interval notation): $(-\infty, -2)$

domain (set builder): $\{x \mid x \text{ is a real number}\}$

range (set builder): $\{y \mid y \leq -2\}$

13. $x \neq -\frac{3}{2}, -1$

14. "f of x"; when you input an x , $f(x)$ is the output of the function. The function is defined in terms of x .

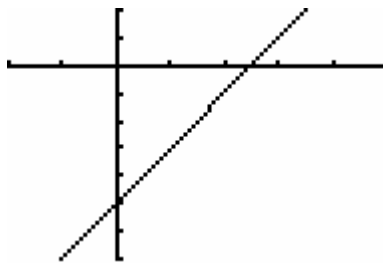
15. -10

$$a^2 + 8a + 2$$

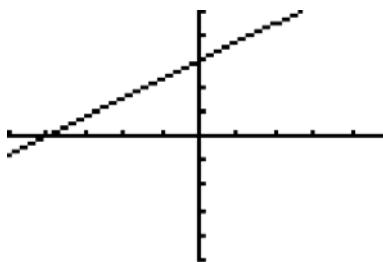
16. 72

17. plotting 3 points;
plotting x and y intercepts;
plot a point and the slope

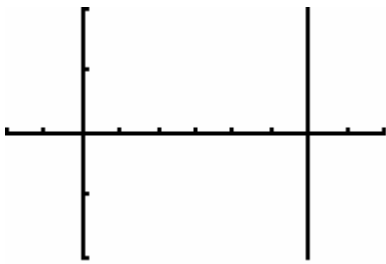
18.



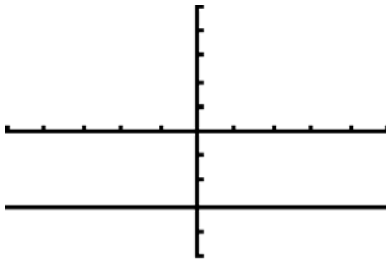
19.



20.



21.



22. a. $Ax + By = C$

b. $y = mx + b$

c. $y - y_1 = m(x - x_1)$

23. slope-intercept equation: $y = \frac{-7}{3}x - \frac{5}{3}$

standard form equation: $7x + 3y = -5$

24. $x - 2y = 1$

25. $x = 3, -1$

26. $x = -3, 6$

27. $x = 3$

28. $x = -1$

29. $x = -3, 5$

30. $x = \frac{2}{3}, -4$

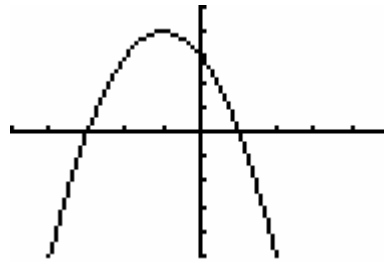
31. $x = 5 \pm 3i$

32. $x = \pm \frac{7}{2}i$

33. $x = -\frac{2}{3}, 2$

34. $x = \frac{3 \pm \sqrt{65}}{4}$

35.



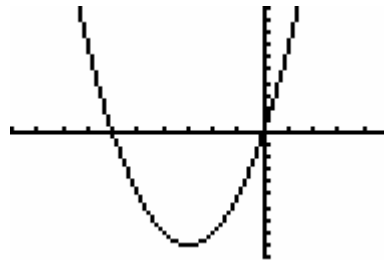
vertex: (1, 2)

x-intercept(s): none

y-intercept: (0, 3)

equation axis of symmetry: $x = 1$

36.



vertex: (-3, -9)

x-intercept(s): (0, 0) and (-6, 0)

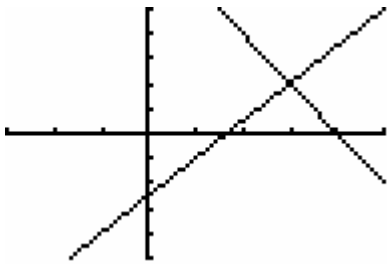
y-intercept: (0, 0)

equation axis of symmetry: $x = -3$

37. $x = 180$

38. $x = 10.5$ or $\frac{21}{2}$

39. solution: (3,2)



40. (-2,4)

41. $\frac{10x^8}{81}$

42. 1.77

43. 2.64

44. $\frac{1}{4}$

45. $x = -1$

46. 30 lb @ \$4 and 20lb @\$8

47. \$10,000 @ 4% and \$5,000 @ 3%

48. The perimeter is 160 feet.

49. The perimeter of the original square is 8 inches.

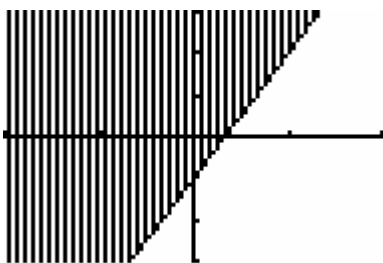
50. $\frac{11t^4\sqrt{2tu}}{u^6}$

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

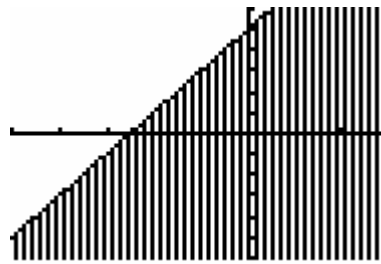
52. Domain: $[2, \infty)$ or $\{x | x \geq 2\}$

Range: $[0, \infty)$ or $\{y | y \geq 0\}$

53.



54.



55. (-5,-2)

56. $(-\infty, -6) \cup (-3, \infty)$

57. $\left(-\infty, -\frac{11}{2}\right] \cup [4, \infty)$

58. $\left(-8, \frac{16}{3}\right)$

59. 62.3

60. 100 ft².

61. $f^{-1}(x) = \frac{1}{3}x + 3$

62. $f^{-1}(x) = x - 3$

63. $f^{-1}(x) = -\frac{1}{4}x + \frac{3}{2}$

64. $4 + i$

65. $55 + 48i$

66. $69 - 13i$

67. $x = 7$

68. $x = 1 \pm 5i\sqrt{2}$

69. $x = \frac{3}{2} \pm \frac{1}{2}i$ or $\frac{3 \pm i}{2}$

70. a. 10π cm

b. 25π sq cm or 25π cm²

c. about 10.5 cm

d. about 20.5 cm

e. about 26.2 sq cm or 26.2 cm²

71. 24π cm

72. Matching:

A. c

B. e

C. g

D. i

E. h

F. b

G. f

H. a

I. j

J. d

73. 1077.6 in^3 or 1077.6 cu in

74. $b \approx 15.9 \text{ cm}$; $m\angle A \approx 20.7^\circ$, $m\angle B \approx 69.3^\circ$

75. $x \approx 7.4^\circ$

76. $a = 6 \text{ ft}$

$c = 8.5 \text{ ft}$

77. $e = 7 \text{ mm}$

$f = 14 \text{ mm}$