

Practice Math Placement Assessment Answer Key

Whole Numbers, Fractions, and Decimals

1. -4.9
2. $\frac{3}{4}$
3. $\frac{33}{35}$

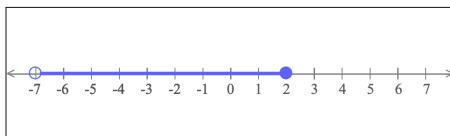
Percents, Proportions, and Geometry

4. 40%
5. 80.1
6. 10 m/s^2
7. \$36
8. 44 units
9. 42 yds^2
10. Circumference: 18.84 yd, Area: 28.26 yd^2
11. 7.2 in
12. $u = \frac{kpd}{w}$

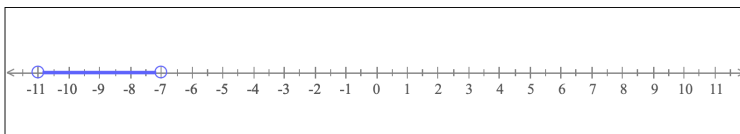
Signed Numbers, Linear Equations and Inequalities

13. (a) 14
(b) 8
14. $u = 1.6$
15. $w = -\frac{1}{2}$
16. $d = 2\frac{A}{h} - c$
17. Kira: \$10, Henry: \$15, Chang: \$45
18. Rita: 26, Frank 64, Justin 16
19. (a) No solution
(b) $x = 3$
20. $v > -5$
21. $w \leq -6$ or $w \geq 10$

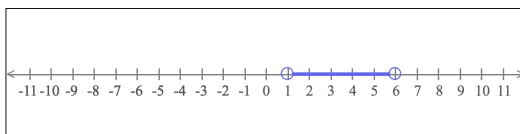
22. Interval notation: $(-7, 2]$



23.



24.



Lines and Systems of Linear Equations

25. $y - 6 = 4(x + 2)$

26. (a) $\frac{1}{2}$
(b) -2

27. (a) $-\frac{7}{8}$
(b) $\frac{8}{7}$

28. (a) No solution

(b) Infinitely many solutions satisfying $y = 1 - \frac{x}{5}$

29. Rate of the plane in still air: 1090 km/hr, rate of the wind: 220 km/hr

Relations and Functions

30. (a) $J \cup L = \{a, b, f, j\}$
(b) $J \cap L = \{a, j\}$

31. Domain: $(-3, 2]$; Range: $(-5, 4]$

32. Vertical shift downward two units

33. $(q \circ r)(5) = -53$ and $(r \circ q)(5) = 74$

34. $(g + h)(x) = 5x + 3$, $(g \cdot h)(x) = 4x^2 - 4$, and $(g - h)(2) = -11$

35. $g^{-1}(2) = 6$, $h^{-1}(x) = \frac{x + 8}{3}$, $(h \circ h^{-1})(7) = 7$

Integer Exponents and Factoring

36. $x^2 - 3x - 10$

37. $6vw^4(2y^3 - 3v^4w^5)$

38. $20u^5w^8v^7$

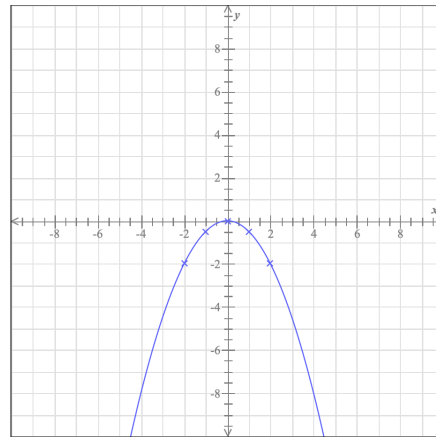
Quadratic and Polynomial Functions

39. $u = -3, u = 2$.

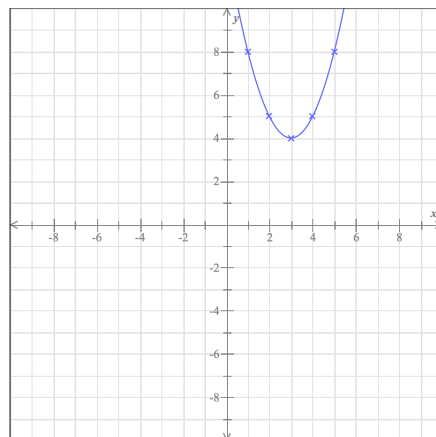
40. x -intercepts: $x = -6, 0, 7$; y -intercepts: $y = 0$

41. 12; two real solutions

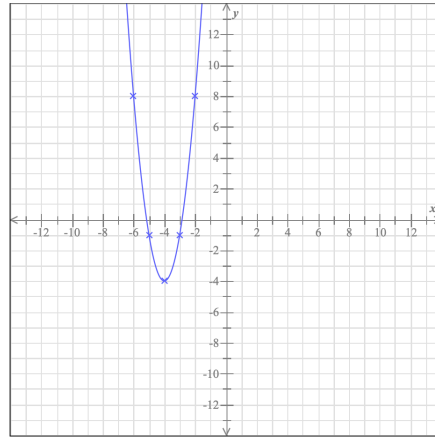
42.



43.

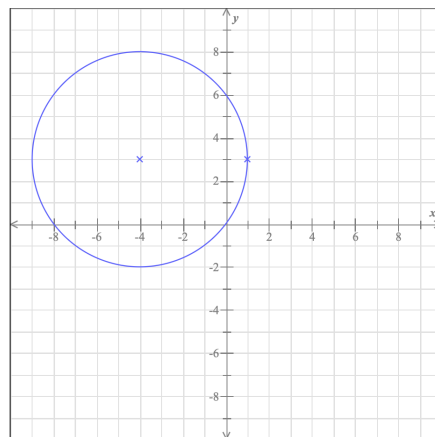


44.



45. $y = 3, 7$

46.



47. (a) -3, 2

(b) 3, 4

48. $t = 0.86$ seconds or $t = 1.45$ seconds

49. x -intercepts: $x = -5$ and $x = 7$; vertex: $(1, -36)$

Rational Expressions and Functions

50. $-\frac{2x^2 + 3x + 3}{x^2 - x}$

51. $-\frac{13a + 7b}{7a}$

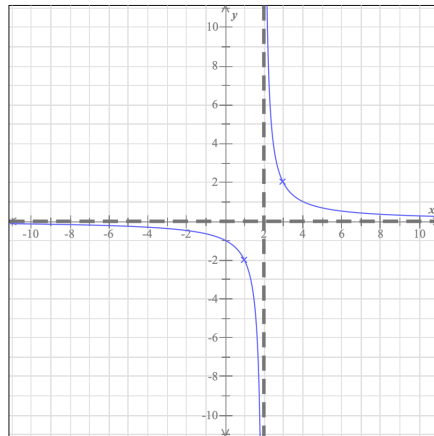
52. $\frac{27a - 16x}{12a}$

$$53. \frac{2v^2y^4}{2v - 3x}$$

$$54. x = -3, 6$$

$$55. \frac{x^{4/3}}{y^{2/9}}$$

56.



$$57. \frac{x^2 - x - 2}{3x + 9}$$

$$58. \frac{5(v + 4)}{v + 1}$$

$$59. x = -8, 8$$

Radicals and Rational Exponents

$$60. \frac{\sqrt{14}}{2}$$

$$61. 2\sqrt[3]{2}$$

$$62. \text{(a) } \frac{1}{8}$$

$$\text{(b) } \frac{1}{32}$$

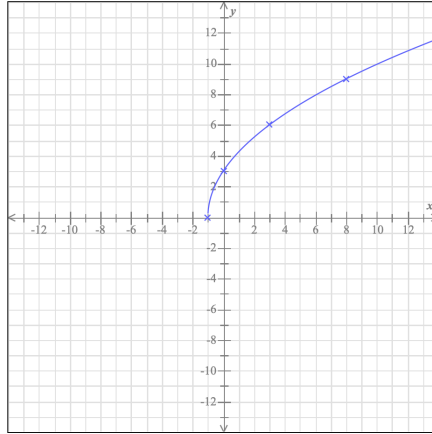
$$63. \frac{1}{b^{3/10}c^6}$$

$$64. \text{(a) } 36\sqrt{2}u^{3/2}w$$

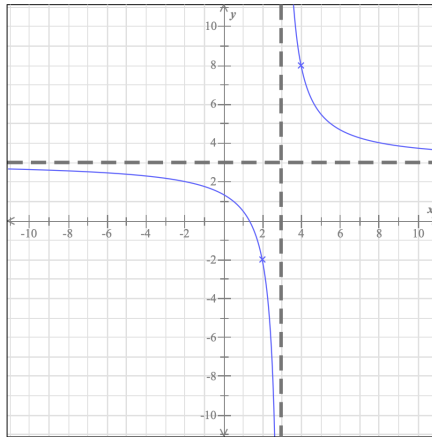
$$\text{(b) } 22xu^2\sqrt{5u}$$

$$\text{(c) } -20\sqrt{2}v\sqrt{y^3}$$

65.



66.



67. $y = 9$

68. $z^{5/6}$

69. $\frac{7 + 2\sqrt{10}}{3}$

Exponentials and Logarithms

70. $\log y + 3 \log x$

71. $\ln x = 9$

72. $x = 14$

73. -3.86

74. $\frac{1}{49}$

75. $x = -\frac{3}{2}$

76. $x = -\frac{1}{3}$

77. $x \approx 2.08, y \approx -0.16$

78. 5.39

79. 0.921

80. -4

Trigonometry

81. $-\frac{12}{13}$

82. $\left(-\frac{\sqrt{3}}{2}, -\frac{1}{2}\right)$

83. (a) 45°

(b) $\frac{\pi}{4}$

84. (a) 115°

(b) $\frac{13\pi}{10}$

85. $\sin x$

86. $\frac{3\pi}{4}, \frac{5\pi}{4}$

87. $\sin \theta = \frac{7}{\sqrt{58}}, \sec \theta = \frac{-\sqrt{58}}{3}, \tan \theta = -\frac{7}{3}$

88. 300°

89. $\frac{\pi}{3}, \frac{2\pi}{3}$

90. $-\frac{\pi}{4}$

91. $\cos 8\theta$

92. (a) $-\sqrt{2}$

(b) 1

93. $\frac{\sqrt{2}}{2}$

94. $B = 36^\circ, b = 2.0, c = 3.4$

95. $\cos x$

96. $x = \frac{3\pi}{2}$

97. $-\frac{\pi}{6}$