Honors Algebra II Final Review
Answer Section

MULTIPLE CHOICE

1. ANS: C REF: 3-6 Solving Systems Using Matrices
2. ANS: C REF: 4-3 Modeling With Quadratic Functions
3. ANS: D REF: 5-1 Polynomial Functions
4. ANS: B REF: 5-4 Dividing Polynomials
5. ANS: A REF: 6-3 Binomial Radical Expressions
6. ANS: A REF: 6-4 Rational Exponents
7. ANS: A REF: 6-4 Rational Exponents

SHORT ANSWER

8. ANS:
(–4, –3)

REF: 3-1 Solving Systems Using Tables and Graphs
9. ANS:
(2, –3)

REF: 3-1 Solving Systems Using Tables and Graphs
10. ANS:
6

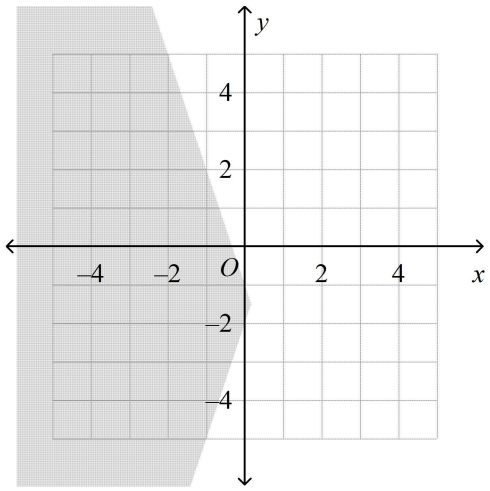
REF: 3-1 Solving Systems Using Tables and Graphs
11. ANS:
(1, 2)

REF: 3-2 Solving Systems Algebraically
12. ANS:
(–7, –8)

REF: 3-2 Solving Systems Algebraically
13. ANS:
no solutions

REF: 3-2 Solving Systems Algebraically

14. ANS:



REF: 3-3 Systems of Inequalities

15. ANS:
(2, –2, –2)

REF: 3-5 Systems With Three Variables

16. ANS:
vertex: (–2, –4);
axis of symmetry: $x = -2$

REF: 4-1 Quadratic Functions and Transformations

17. ANS:
minimum value: –3
domain: all real numbers
range: all real numbers ≥ –3

REF: 4-1 Quadratic Functions and Transformations

18. ANS:
reflect across the x-axis, translate 3 units to the left, translate up 5 units

REF: 4-1 Quadratic Functions and Transformations

19. ANS:
$y = 3(x + 8)^2 - 7$

REF: 4-1 Quadratic Functions and Transformations

20. ANS:
$y = (x - 1)^2 + 7$

REF: 4-2 Standard Form of a Quadratic Function

21. ANS:
The bridge is about 193.52 ft. above the river and the length of the bridge above the arch is about 1250.51 ft.

REF: 4-2 Standard Form of a Quadratic Function

22. ANS:
$2(x+3)(x+5)$

REF: 4-4 Factoring Quadratic Expressions

23. ANS:
$(3x+5)(x+7)$

REF: 4-4 Factoring Quadratic Expressions

24. ANS:
$(4x+5)(4x-5)$

REF: 4-4 Factoring Quadratic Expressions

25. ANS:
$-4, -7$

REF: 4-5 Quadratic Equations

26. ANS:
The frog jumped about 4.36 ft. far and about 31.11 ft. high.

REF: 4-5 Quadratic Equations

27. ANS:
$-\frac{7}{6}, \frac{7}{6}$

REF: 4-6 Completing the Square

28. ANS:
$-4, -14$

REF: 4-6 Completing the Square

29. ANS:
0, 8

REF: 4-6 Completing the Square

30. ANS:
81

REF: 4-6 Completing the Square

31. ANS:
$-5 \pm \sqrt{11}$

REF: 4-6 Completing the Square

32. ANS:
$y = (x-6)^2 - 2$
vertex: $(6, -2)$
y-intercept: $(0, 34)$

REF: 4-6 Completing the Square

33. ANS:
$-\frac{5}{4} \pm \frac{\sqrt{65}}{4}$

REF: 4-7 The Quadratic Formula

34. ANS:
$\frac{1}{8} \pm \frac{\sqrt{65}}{8}$

REF: 4-7 The Quadratic Formula

35. ANS:
$6i\sqrt{10}$

REF: 4-8 Complex Numbers

36. ANS:
$-1 - 9i$

REF: 4-8 Complex Numbers

37. ANS:
$18 + 40i$

REF: 4-8 Complex Numbers

38. ANS:
$\frac{-7 + 11i}{17}$

REF: 4-8 Complex Numbers

39. ANS:
$-\frac{4}{3}i, \frac{4}{3}i$

REF: 4-8 Complex Numbers

40. ANS:
(–4, 1)
(–2, 3)

REF: 4-9 Quadratic Systems

41. ANS:
$-8x^5 + 10x^4$

REF: 5-1 Polynomial Functions

42. ANS:
$4x(x - 4)(x + 6)$

REF: 5-2 Polynomials, Linear Factors, and Zeros

43. ANS:
6, –6, 2, –2

REF: 5-3 Solving Polynomial Equations

44. ANS:
2, $1 + i\sqrt{3}$, and $1 - i\sqrt{3}$

REF: 5-3 Solving Polynomial Equations

45. ANS:
$4x^2 - 14x + 59$, R –232

REF: 5-4 Dividing Polynomials

46. ANS:
–9, –3, –1, 1, 3, 9

REF: 5-5 Theorems About Roots of Polynomial Equations

47. ANS:
$-2, 3, \frac{-1 - i\sqrt{3}}{2}, \frac{-1 + i\sqrt{3}}{2}$

REF: 5-6 The Fundamental Theorem of Algebra

48. ANS:
$s^5 + 10s^4v + 40s^3v^2 + 80s^2v^3 + 80sv^4 + 32v^5$

REF: 5-7 The Binomial Theorem

49. ANS:
$15s^4v$

REF: 5-7 The Binomial Theorem

50. ANS:
$-\frac{5}{7}$

REF: 6-1 Roots and Radical Expressions

51. ANS:
$3|x^5|y^2$

REF: 6-1 Roots and Radical Expressions

52. ANS:
$3x^5y^8$

REF: 6-1 Roots and Radical Expressions

53. ANS:
1.53 in.

REF: 6-1 Roots and Radical Expressions

54. ANS:
$x\sqrt{7} - 49\sqrt{x}$

REF: 6-2 Multiplying and Dividing Radical Expressions

55. ANS:
$3a^5b^3\sqrt[3]{4a}$

REF: 6-2 Multiplying and Dividing Radical Expressions

56. ANS:
$10x^4y^5\sqrt{3y}$

REF: 6-2 Multiplying and Dividing Radical Expressions

57. ANS:
$3\sqrt[3]{3}$

REF: 6-2 Multiplying and Dividing Radical Expressions

58. ANS:
$3x^6\sqrt[3]{2x}$

REF: 6-2 Multiplying and Dividing Radical Expressions

59. ANS:
$3x^8\sqrt{5x}$

REF: 6-2 Multiplying and Dividing Radical Expressions

60. ANS:
$8\sqrt[4]{2x}$

REF: 6-3 Binomial Radical Expressions

61. ANS:
$54 - \sqrt{2}$

REF: 6-3 Binomial Radical Expressions

62. ANS:
23

REF: 6-3 Binomial Radical Expressions

63. ANS:
$-3 + 2\sqrt{2}$

REF: 6-3 Binomial Radical Expressions

64. ANS:
$3\sqrt[8]{x^3}$

REF: 6-4 Rational Exponents

65. ANS:
$\frac{a^2}{4}$

REF: 6-4 Rational Exponents

66. ANS:
–6

REF: 6-5 Solving Square Root and Other Radical Equations

67. ANS:
28

REF: 6-5 Solving Square Root and Other Radical Equations

68. ANS:
26

REF: 6-5 Solving Square Root and Other Radical Equations

69. ANS:
1

REF: 6-5 Solving Square Root and Other Radical Equations

70. ANS:
–53

REF: 6-6 Function Operations

71. ANS:
9

REF: 6-6 Function Operations

72. ANS:
$y = \pm\sqrt{\frac{x+3}{7}}$

REF: 6-7 Inverse Relations and Functions

73. ANS:
$y = 361\left(\frac{1}{2}\right)^{\frac{1}{32}x}$; 323.945 kg

REF: 7-2 Properties of Exponential Functions

74. ANS:
$1,923.23

REF: 7-2 Properties of Exponential Functions

75. ANS:
$\log_2 32 = 5$

REF: 7-3 Logarithmic Functions as Inverses

76. ANS:
–4

REF: 7-3 Logarithmic Functions as Inverses

77. ANS:
$\log_b(q^3 v^6)$

REF: 7-4 Properties of Logarithms

78. ANS:
none of these

REF: 7-4 Properties of Logarithms

79. ANS:
$\log_3 11 + 3 \log_3 p$

REF: 7-4 Properties of Logarithms

80. ANS:
2.161

REF: 7-4 Properties of Logarithms

81. ANS:
$\frac{7}{12}$

REF: 7-5 Exponential and Logarithmic Equations

82. ANS:
$\frac{3}{8}$

REF: 7-5 Exponential and Logarithmic Equations

83. ANS:
0.6616

REF: 7-5 Exponential and Logarithmic Equations

84. ANS:
$\frac{495}{2}$

REF: 7-5 Exponential and Logarithmic Equations

85. ANS:
$\ln \frac{x^3}{c^2}$

REF: 7-6 Natural Logarithms
86. ANS:
3

REF: 7-6 Natural Logarithms
87. ANS:
1,490.979

REF: 7-6 Natural Logarithms
88. ANS:
–0.046

REF: 7-6 Natural Logarithms
89. ANS:
–4.801

REF: 7-6 Natural Logarithms
90. ANS:
$y = \frac{16}{x}$

REF: 8-1 Inverse Variation
91. ANS:
$x = -2, x = 7$; yes

REF: 8-3 Rational Functions and Their Graphs
92. ANS:
asymptote: $x = -1$ and hole: $x = -4$

REF: 8-3 Rational Functions and Their Graphs
93. ANS:
$y = -\frac{1}{2}$

REF: 8-3 Rational Functions and Their Graphs
94. ANS:
$\frac{q+8}{q-8}; q \neq -3, q \neq 8$

REF: 8-4 Rational Expressions

95. ANS:
$\frac{z^2 + 2z}{z + 3}$, $z \neq -1,\ 0,\ -3$

REF: 8-4 Rational Expressions

96. ANS:
$\frac{(x - 4)^2}{(x + 3)(x + 1)}$; $x \neq -4, -3, -2, -1, 4$

REF: 8-4 Rational Expressions

97. ANS:
$\frac{7a - 49}{(a - 8)(a + 8)}$

REF: 8-5 Adding and Subtracting Rational Expressions

98. ANS:
$\frac{w + 4}{w - 5}$

REF: 8-5 Adding and Subtracting Rational Expressions

99. ANS:
$\frac{b - 10}{b - 1}$

REF: 8-5 Adding and Subtracting Rational Expressions

100. ANS:
$\frac{21a - 28}{(a - 6)(a + 8)}$

REF: 8-5 Adding and Subtracting Rational Expressions

101. ANS:
$-\frac{3}{5}$

REF: 8-5 Adding and Subtracting Rational Expressions

102. ANS:
$\frac{n - 6}{(n + 1)(n + 8)}$

REF: 8-5 Adding and Subtracting Rational Expressions

103. ANS:
$-\frac{11}{3}$

REF: 8-6 Solving Rational Equations
104. ANS:
–4

REF: 8-6 Solving Rational Equations
105. ANS:
$-\frac{11}{24}$

REF: 8-6 Solving Rational Equations
106. ANS:
$a_n = a_{n-1} + 6, \text{where } a_1 = 7; 37$

REF: 9-1 Mathematical Patterns
107. ANS:
1083

REF: 9-2 Arithmetic Sequences
108. ANS:
28

REF: 9-2 Arithmetic Sequences
109. ANS:
yes; 2

REF: 9-3 Geometric Sequences
110. ANS:
405

REF: 9-3 Geometric Sequences
111. ANS:
484

REF: 9-4 Arithmetic Series
112. ANS:
165

REF: 9-4 Arithmetic Series
113. ANS:
15

REF: 11-1 Permutations and Combinations

114. ANS:
$\frac{11}{20}$

REF: 11-2 Probability

115. ANS:
$\begin{bmatrix} -7 & 2 \\ 4 & 1 \end{bmatrix}$

REF: 12-1 Adding and Subtracting Matrices

116. ANS:
$t = 3, y = 5$

REF: 12-1 Adding and Subtracting Matrices

117. ANS:
$\begin{bmatrix} 20 & 80 \\ 32 & 3 \end{bmatrix}$

REF: 12-2 Matrix Multiplication

118. ANS:
–108

REF: 12-3 Determinants and Inverses

119. ANS:
$\begin{bmatrix} 7 & 25 \\ -2 & -7 \end{bmatrix}$

REF: 12-3 Determinants and Inverses

120. ANS:
0.05 seconds; 4.5

REF: 13-1 Exploring Periodic Data

121. ANS:
250º

REF: 13-2 Angles and the Unit Circle

122. ANS:
$\sin = -\frac{\sqrt{3}}{2}$

REF: 13-2 Angles and the Unit Circle

123. ANS:
108º

REF: 13-3 Radian Measure

124. ANS:
–240º

REF: 13-3 Radian Measure

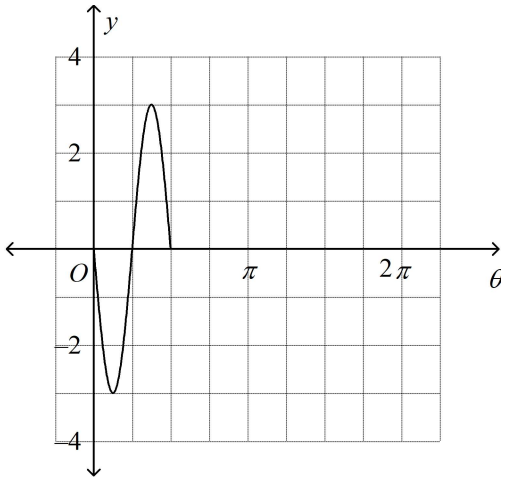
125. ANS:
$-\frac{\sqrt{2}}{2}, \frac{\sqrt{2}}{2}$

REF: 13-3 Radian Measure

126. ANS:
$\frac{\sqrt{2}}{2}$

REF: 13-3 Radian Measure

127. ANS:



REF: 13-4 The Sine Function

128. ANS:
period = $\frac{1}{2}\pi$; range: $-3 \le y \le 3$; amplitude = 3

REF: 13-5 The Cosine Function

129. ANS:
$-\sqrt{3}$

REF: 13-6 The Tangent Function

130. ANS:
0

REF: 13-8 Reciprocal Trigonometric Functions