

**Chapter
3****Extra Review**

Name _____ Date _____

Graph the function. Compare the graph to the graph of $f(x) = x^2$.

56. $h(x) = 4x^2$

57. $t(x) = 0.2x^2$

58. $n(x) = -\frac{2}{5}x^2$

59. $a(x) = -7x^2$

60. $r(x) = -0.625x^2$

61. $m(x) = \frac{1}{2}x^2$

62. $g(x) = x^2 + 3$

63. $h(x) = x^2 + 10$

64. $p(x) = x^2 - 10$

65. $s(x) = -x^2 - 2$

66. $p(x) = 4x^2 + 2$

67. $q(x) = -\frac{1}{5}x^2 - 5$

Find the zeroes of the function.

68. $y = x^2 - 4$

69. $f(x) = -9x^2 + 36$

70. $f(x) = 50x^2 - 18$

71. The function $f(t) = -16t^2 + s_0$ represents the approximate height (in feet) of an object falling t seconds after it is dropped from an initial height s_0 (in feet). A watermelon is dropped from a height of 100 feet.

- After how many seconds does the watermelon hit the ground?
- Suppose the initial height is adjusted by k feet. How will this affect the answer for part (a)?

Find (a) the axis of symmetry and (b) the vertex of the graph of the function.

72. $y = -10x^2 - 40x - 9$

73. $f(x) = 4x^2 - 24x - 30$

Graph the function. Describe the domain and range.

74. $f(x) = -2x^2 - 16x + 9$

75. $f(x) = -x^2 + 18x - 1$

Tell whether the function has a minimum value or a maximum value. Then find the value.

76. $f(x) = -3x^2 - 24x + 5$

77. $f(x) = 5x^2 + 40x - 14$

78. $f(x) = -7x^2 + 28x - 10$

79. $f(x) = 9x^2 - 36x + 21$

**Chapter
3****Cumulative Review (continued)**

Determine whether the function is *even*, *odd*, or *neither*.

80. $f(x) = 4x$

81. $g(x) = x^2 + 5$

82. $h(x) = 4x^2 + 8x - 5$

Find the vertex and the axis of symmetry of the graph of the function.

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

84. $g(x) = 3(x - 1)^2$

85. $h(x) = (x + 3)^2$

86. $f(x) = -3(x - 7)^2 - 8$

87. $g(x) = 8(x + 2)^2 + 9$

Graph the function. Compare the graph to the graph of $f(x) = x^2$.

88. $f(x) = 2(x - 3)^2$

89. $f(x) = 4(x + 1)^2 + 5$

Graph the quadratic function.

90. $f(x) = 2(x - 5)(x + 1)$

91. $y = -3(x + 2)(x - 7)$

92. $f(x) = x^2 - 36$

93. $h(x) = x^2 - 2x - 15$

Find the zero(s) of the function.

94. $y = -3(x + 7)(x - 1)$

95. $g(x) = x^2 + 15x + 26$

96. $f(x) = (x + 3)(x^2 - 9)$

97. $h(x) = 2x^2 - 6x - 20$

Tell whether the data represents a *linear*, an *exponential*, or a *quadratic* function.

Then write the function.

98. $(-2, 4), (-1, 7), (0, 10), (1, 13), (2, 16)$

99. $(-2, -5), (-1, -8), (0, -9), (1, -8), (2, -5)$

100. $(0, 1), (1, 3), (2, 9), (3, 27), (4, 81)$