

Chapter 8

Cumulative Review (continued)

Factor the polynomial completely.

54. $2x^3 + 8x^2 - 3x - 12$

55. $5y^3 - 10y^2 + 7y - 14$

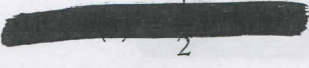
Compare the graph to the graph of $f(x) = x^2$.

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



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

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



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



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



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.

- a. After how many seconds does the watermelon hit the ground?
- b. 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. $f(x) = 9x^2 - 36x + 21$

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Chapter 8 Cumulative Review (continued)

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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

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

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

