

Chapter Five Review

R – AA – U1C5

Name _____ Period _____

1. Solving the quadratic equation by using any method: $3x^2 + 8x - 3 = 0$. 1. _____
2. Solving the quadratic equation by using any method: $-4x^2 = 35$ 2. _____
3. Solving the quadratic equation by using any method: $4(x - 2)^2 = -8$ 3. _____
4. Solving the quadratic equation by using any method: $x^2 + 2x - 2 = 0$ 4. _____
5. Solving the quadratic equation by using any method: $3x^2 - 14x = -49$ 5. _____

6. Solving the quadratic equation by using any method: $(x - 2)^2 + 64 = 0$ 6. _____
7. Write the following expression as a complex number in standard form: $(7 + 2i) - (3 + 3i)$ 7. _____
8. Write the following expression as a complex number in standard form: $(5 + 3i)(2 - 4i)$ 8. _____
9. Write the following expression as a complex number in standard form: $\frac{3 - i}{2 + i}$ 9. _____
10. Factor the following expression completely: $10x^2 - 3x - 1$ 10. _____
11. Factor the following expression completely: $9x^2 - 121$ 11. _____
12. Factor the following expression completely: $6x^2 + 17x + 5$ 12. _____

13. Factor the following expression completely:
 $2x^2 - x - 21$ 13. _____
14. Factor the following expression completely:
 $5x^2 + 3x - 2$ 14. _____
15. Factor the following expression completely:
 $3x^2 + 8x - 3$ 15. _____
16. A model for Healey Construction's revenue is $R = -15p^2 + 300p + 12000$, where p is the price in dollars of the company's product. What price will maximize the revenue? What will be the maximum revenue? 16. Price: _____
Maximum revenue: _____
17. The equation for the motion of a projectile fired straight up at an initial velocity of 64 ft/sec is $h = -16t^2 + 64t$, where h is the height in feet and t is the time in seconds. Find the time the projectile needs to reach its highest point. How high will it go? At what height does it start before the projectile is fired? 17. Time: _____
Height: _____
Original height: _____

18. From 1990 to 1996, the consumption of poultry per capita is modeled by $y = -0.2125t^2 + 2.615t + 56.33$, where $t = 0$ corresponds to 1990. During what year was the consumption of poultry per capita at about 61 per capita?

18. Year: _____

Find the vertex of the quadratic function and explain how you found it. Identify the axis of symmetry. Identify the coordinate of the y-intercept. Identify the coordinates of the x-intercept(s). Also identify if the vertex of the graph is a minimum or maximum. Then graph the quadratic function.

19. $y = 4x^2 + 8x - 45$

Vertex: _____

Vertex: Minimum Maximum

Axis of symmetry: _____

y-intercept: _____

x-intercept(s): _____

20. $y = -(x - 1)^2 - 1$

Vertex: _____

Vertex: Minimum Maximum

Axis of symmetry: _____

y-intercept: _____

x-intercept(s): _____

