Chapter Five Review

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: $\dfrac{3 - i}{2 + i}$

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: 13. _____
$2x^2 - x - 21$

14. Factor the following expression completely: 14. _____
$5x^2 + 3x - 2$

15. Factor the following expression completely: 15. _____
$3x^2 + 8x - 3$

16. A model for Healey Construction's   16. Price: _____
revenue is $R = -15p^2 + 300p + 12000$,
where p is the price in dollars of the company's   Maximum revenue: _____
product. What price will maximize the
revenue? What will be the maximum revenue?

17. The equation for the motion of a projectile   17. Time: _____
fired straight up at an initial velocity of 64 ft/sec
is $h = -16t^2 + 64t$, where h is the height in feet   Height: _____
and t is the time in seconds. Find the time the
projectile needs to reach its highest point. How   Original height: _____
high will it go? At what height does it start before
the projectile is fired?

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): _____