NCM1B **Unit 4 Quadratics Part 1 Review**  Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**I. Short Answer**

1. The graph of a quadratic equation is called a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. Quadratic equations have a degree = \_\_\_\_\_\_which tells us the equation has **\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_**

3. List the 4 steps to solving a quadratic equation by factoring.

* a. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* b. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* c. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* d. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. GCF, Box, Bust up the B, and DOTS all are methods we use to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

5. \_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_ means to set each factor with a variable equal to zero when solving a quadratic equation by factoring.

6. Solutions to an equation are also called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

7. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_when you solve an equation are the x-intercepts when you graph the equation.

**II. For each graphed parabola, state the following:**



8. 9. 10.

 x-intercept(s): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ x-intercept(s): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ x-intercept(s): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**III. Solve each quadratic equation by factoring.**

11. n2 – 8n = 0 12. n2 – 3 = – 2n 13. 4m2 + 8m – 12 = 0

14. a2 = 11a – 30 15. (4x + 3) (x – 6) = 0 16. 7n2 = 28

17. (t + 2) (t – 2) = – 3 18. x2 + 13x –14 = 0 19. c2 – 52 = 17c + 8

20. 3x2 = –15x 21. x2 – 36 = 0 22. 2x2 – 2x – 24 = 0

23. $-13x+5x^{2}=6$ 24. $-4x^{2}=-4x-3$ 25. $18x^{2}-28x-25=5x-4$

**IV. Solve by Square Root**

26. $x^{2}=36$ 27. $x^{2}+9=18$ 28. $(x+4)^{2}=100$

29. $4k^{2}+18=19$ 30. $x^{2}-16=0$ 31. $6x^{2}=24$

32. $x^{2}=81$ 33. $(x-4)^{2}=144$ 34. $-8x^{2}=-72$

35. $(3x+4)^{2}=225$ 36. $5x^{2}=125$ 37. $x^{2}+2=3$

**V. Applications**

38. A relief package is released from a helicopter at 1600 feet. The height of the package can be modeled by the equation $h\left(t\right)=-16t^{2}+1600$, where h is the height of the package in feet and t is the time in seconds. How long will it take the package to hit the ground?

39. The height of a rock thrown off a cliff can be modeled by the equation $h\left(t\right)=-16t^{2}-8t+120$, where h is the height in feet and t is the time in seconds. How long will it take the rock to reach the ground?

40. One positive number is 4 less than twice another number. The product of the two numbers is 126. Find the two numbers.

41. Two negative consecutive **odd** integers have a product of 255. Find the integers.

42. The length of a rectangle is three more than four times the width. The area of the rectangles is 10 square meters. Find the dimensions of the rectangle.

43. The height of a triangle is two more than four times the base. The area of the triangle is 15 square feet. Find the base and the height of the triangle.