

Name _____ Date _____ Pd _____

3.1 – 3.3 Quiz Review CYU

Use when you get it right all by yourself

S Use when you did it all by yourself, but made a silly mistake

H Use when you could do it alone with a little help from teacher or peer

G Use when you completed the problem in a group

X Use when a question was attempted but wrong (get help)

N Use when a question was not even attempted

CONCEPTS	BASIC	INTERMEDIATE	ADVANCED
Solving Quadratic Equations	1 - 8	9 - 12, 31 - 34	13, 14, 43 - 48
Factoring	1, 2, 4	3, 5 - 8	
Square Root Method	9	10	11, 12
Projectile Motion			13, 14
Complex Numbers	15 - 20		
Operations with Complex Numbers	15 - 20		
Simplifying Radicals with Negatives	21 - 24		
Vocabulary	25 - 30		
Finding a new "c" or □	35 - 38		
Converting to Vertex Form			39 - 42
Completing the Square		43 - 48	39 - 42

Be sure to show all work for full and partial credit. Read the directions carefully, and box your final answer. If time allows check your work using a different method like the calculator!

3.1 Solving Quadratic Equations

I. Using Factoring: because it is the most efficient

1. $(3n - 2)(4n + 1) = 0$

2. $m(m - 3) = 0$

3. $3k^2 + 72 = 33k$

4. $n^2 = -18 - 9n$

5. $-2v^2 - v + 12 = -3v^2 + 6v$

6. $3x^2 - 8x = 16$

7. $28n^2 = -96 - 184n$

8. $7a^2 + 32 = 7 - 40a$

II. Using the Square Root Method: because “b” is 0

9. $k^2 + 6 = 6$

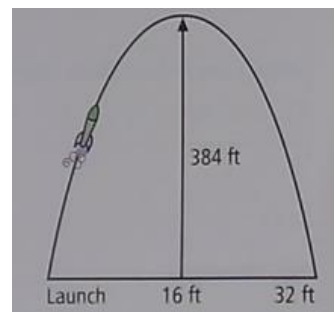
10. $25v^2 = 1$

11. $-10 - 5n^2 = -330$

12. $13p^2 - 3 = 4209$

III. With Projectile Motion: word problems in meters (-4.9) and feet (-16)

13. The diagram shows the path of a model rocket launched from the ground. It reaches a maximum altitude of 384 ft when it is above a location 16 ft from the launch site. What quadratic function models the height of the rocket? (*HINT: write your equation without the “b” and use the vertex or zero as your point (x, y) to find b, then write your equation!*)



14. A woman drops a front door key to her husband from their apartment window several stories above the ground. The function $h = -16t^2 + 64$ gives the height h of the key in feet, t seconds after she releases it.
- How long does it take the key to reach the ground?
 - What are the reasonable domain and range for the function h ?

3.2 Complex Numbers

I. **Operations:** be careful of the sign: addition, subtraction, or multiplication

15. $i + 6i$

16. $(-1 - 8i) - (4 + i)$

17. $-3 + 6i - (-5 - 3i) - 8i$

18. $4i(-2 - 8i)$

19. $(-2 - i)(4 + i)$

20. $6(-7 + 6i)(-4 + 2i)$

II. **Properties of Imaginary Numbers:** $i^2 = -1$

21. $\sqrt{-40}$

22. $\sqrt{-210}$

23. $\sqrt{-24}$

24. $\sqrt{-96}$

III. **Vocabulary Definitions:** in order to understand word problems better

25. Natural numbers

26. Integer

27. Complex number

28. Real number

29. Irrational number

30. Whole number

IV. **Solving with Complex Numbers:** no solution is no longer an acceptable answer

31. $k^2 + 12 = 6$

32. $x^2 - 2 = -20$

33. $4b^2 - 2 = -326$

34. $2p^2 + 2 = -6$

3.3 Completing the Square

I. Find the new "c" value: what would go in your \square

35. $x^2 + 6x + \square$

36. $z^2 - 10z + \square$

37. $r^2 + 32r + \square$

38. $a^2 - 7a + \square$

II. Convert to Vertex Form: DO NOT SOLVE

39. $x^2 + 14x - 38 = y$

40. $y = x^2 + 6x - 59$

41. $x^2 - 2x - 3 = y$

42. $y = x^2 - 12x + 23$

III. Solve Using Completing the Square: get x alone and do not forget the “±”

43. $r^2 - 4r - 91 = 7$

44. $b^2 + 2b = -20$

45. $k^2 - 4k + 1 = -5$

46. $2x^2 - 5x + 67 = 0$

47. $4n^2 + 4n + 36 = 0$

48. $3x^2 = -4 + 8x$

CYU Reflection: *How far can you go: basic, intermediate, or advanced?*

Rate your mastery level!

How confident are you with the skills this CYU covered? Circle the

