

READY, SET, GO!

Name

Period

Date

READY

Topic: Classifying numbers according to set.

Classify each of the numbers represented below according to the sets to which they belong. If a number fits in more than one set then list all that apply.

(Whole numbers "W", Integers "Z", Rational "Q", Irrational "Q̄", Real "R", Complex "C")

1. π

2. -13

3. $\sqrt{-16}$

4. 0

5. $\sqrt{75}$

6. $\frac{9}{3}$

7. $\sqrt{\frac{4}{9}}$

8. $5 + \sqrt{2}$

9. $\sqrt{-40}$

SET

Topic: Simplifying radicals, imaginary numbers

Simplify each radical expression below.

10. $3 + \sqrt{2} - 7 + 3\sqrt{2}$

11. $\sqrt{5} - 9 + 8\sqrt{5} + 11 - \sqrt{5}$

12. $\sqrt{12} + \sqrt{48}$

13. $\sqrt{8} - \sqrt{18} + \sqrt{32}$

14. $11\sqrt{7} - 5\sqrt{7}$

15. $7\sqrt{7} + 5\sqrt{3} - 3\sqrt{7} + \sqrt{3}$

Simplify. Express as a complex number using "i" if necessary.

16. $\sqrt{-2} \cdot \sqrt{-2}$

17. $7 + \sqrt{-25}$

18. $(4i)^2$

19. $i^2 \cdot i^3 \cdot i^4$

20. $(\sqrt{-4})^3$

21. $(2i)(5i)^2$

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Solve each quadratic equation over the set of complex numbers.

22. $x^2 + 100 = 0$

23. $t^2 + 24 = 0$

24. $x^2 - 6x + 13 = 0$

25. $r^2 - 2r + 5 = 0$

GO

Topic: Solve Quadratic Equations

Use the discriminant to determine the nature of the roots to the quadratic equation.

26. $x^2 - 5x + 7 = 0$

27. $x^2 - 5x + 6 = 0$

28. $2x^2 - 5x + 5 = 0$

29. $x^2 + 7x + 2 = 0$

30. $2x^2 + 7x + 6 = 0$

31. $2x^2 + 7x + 7 = 0$

32. $2x^2 - 7x + 6 = 0$

33. $2x^2 + 7x - 6 = 0$

34. $x^2 + 6x + 9 = 0$

Solve the quadratic equations below using an appropriate method.

35. $m^2 + 15m + 56 = 0$

36. $5x^2 - 3x + 7 = 0$

37. $x^2 - 10x + 21 = 0$

38. $6x^2 + 7x - 5 = 0$

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