

Algebra II

Chapter 1-A Worksheet

Real Numbers All real numbers can be classified as either rational or irrational. The set of rational numbers includes several subsets: natural numbers, whole numbers, and integers.

| | | |
|---|--------------------|--|
| R | real numbers | {all rationals and irrationals} |
| Q | rational numbers | {all numbers that can be represented in the form $\frac{m}{n}$, where m and n are integers and n is not equal to 0} |
| I | irrational numbers | {all nonterminating, nonrepeating decimals} |
| Z | integers | {..., -3, -2, -1, 0, 1, 2, 3, ...} |
| W | whole numbers | {0, 1, 2, 3, 4, 5, 6, 7, 8, ...} |
| N | natural numbers | {1, 2, 3, 4, 5, 6, 7, 8, 9, ...} |

Example Name the sets of numbers to which each number belongs.

a. $-\frac{11}{3}$ rationals (Q), reals (R)

b. $\sqrt{25}$

$\sqrt{25} = 5$ naturals (N), wholes (W), integers (Z), rationals (Q), reals (R)

Exercises

Name the sets of numbers to which each number belongs.

1. $\frac{6}{7}$ Q, R
2. $-\sqrt{81}$ Z, Q, R
3. 0 W, Z, Q, R
4. 192.0005 Q, R
5. 73 N, W, Z, Q, R
6. $34\frac{1}{2}$ Q, R
7. $\frac{\sqrt{36}}{9}$ Q, R
8. 26.1 Q, R
9. π I, R
10. $\frac{15}{3}$ N, W, Z, Q, R
11. $-4.\overline{17}$ Q, R
12. $\frac{\sqrt{25}}{2}$ Q, R
13. -1 Z, Q, R
14. $\sqrt{42}$ I, R
15. -11.2 Q, R
16. $-\frac{8}{13}$ Q, R
17. $\frac{\sqrt{5}}{2}$ I, R
18. $33.\overline{3}$ Q, R
19. 894.000 N, W, Z, Q, R
20. -0.02 Q, R

Lesson 1-2

Solve each equation. Check your solution.

21. $4m + 2 = 18$

$$4$$

22. $x + 4 = 5x + 2$

$$\frac{1}{2}$$

23. $3t = 2t + 5$

$$5$$

24. $-3b + 7 = -15 + 2b$

$$\frac{22}{5}$$

25. $-5x = 3x - 24$

$$3$$

26. $4v + 20 - 6 = 34$

$$5$$

27. $a - \frac{2a}{5} = 3$

$$5$$

28. $2.2n + 0.8n + 5 = 4n$

$$5$$

29. $14 = 8 - 6r$

$$-1$$

30. $9 + 4n = -59$

$$-17$$

31. $\frac{3}{4} - \frac{1}{2}n = \frac{5}{8}$

$$\frac{1}{4}$$

32. $\frac{5}{6}c + \frac{3}{4} = \frac{11}{12}$

$$\frac{1}{5}$$

33. $-1.6r + 5 = -7.8$

$$8$$

34. $6x - 5 = 7 - 9x$

$$\frac{4}{5}$$

35. $5(6 - 4v) = v + 21$

$$\frac{3}{7}$$

Solve each equation or formula for the specified variable.

36. $I = prt$, for p

$$p = \frac{I}{rt}$$

37. $y = \frac{1}{4}x - 12$, for x

$$x = 4y + 48$$

38. $A = \frac{x+y}{2}$, for y

$$y = 2A - x$$

39. $A = 2\pi r^2 + 2\pi rh$, for h

$$h = \frac{A - 2\pi r^2}{2\pi r}$$

40. $E = mc^2$, for m

$$m = \frac{E}{c^2}$$

41. $c = \frac{2d+1}{3}$, for d

$$d = \frac{3c-1}{2}$$