

Extra Practice

Chapter 1

Lesson 1-1

Write an algebraic expression for each word phrase.

1. 3 fewer than y $y - 3$

2. the quotient of r and 12 $\frac{r}{12}$

3. 13 more than the product of 2 and j
 $2j + 13$

4. 8 less than the quotient of 4 and p
 $\frac{4}{p} - 8$

Write a word phrase for each algebraic expression.

5. $2t - 9$
9 less than the product of 2 and t

6. $7 + \frac{6}{k}$
7 more than the quotient of 6 and k

7. $0.5(y + 3.3)$ the product of 0.5 and the quantity of the sum of y and 3.3

8. The cost of a telephone call is 75 cents plus 25 cents times the number of minutes. Write an algebraic expression that models the cost of a telephone call that lasts t minutes. $0.75 + 0.25t$

Lesson 1-2

Simplify each expression.

9. 2^4 16

10. 5^2 25

11. $4 + 3 \cdot 8$ 28

12. $2 \cdot 3^2 - 7$ 11

13. $4^2 + 8 \div 2$
20

14. $9 - (3 + 1)^2$
-7

15. $2 + 6 \cdot 8 \div 4$
14

16. $5 + 4 \cdot (8 - 6)^2$
21

Use the formula for the area of a trapezoid $A = h\left(\frac{b_1 + b_2}{2}\right)$, where A is area,

b_1 and b_2 are the length of the bases and h is the height, to answer each question.

17. What is the area of a trapezoidal pool with a height of 15 yd and bases of 14 yd and 26 yd? 300 yd^2

18. How many square feet of grass are there on a trapezoidal field with a height of 75 ft and bases of 125 ft and 81 ft? 7725 ft^2

Lesson 1-3

Find the square roots of each number.

19. 25 ± 5

20. $\frac{4}{9}$ $\pm \frac{2}{3}$

21. $\frac{25}{36}$ $\pm \frac{5}{6}$

22. 0.81 ± 0.9

Estimate each square root. Round to the nearest integer.

23. $\sqrt{23}$ 5

24. $\sqrt{85}$ 9

25. $\sqrt{231}$ 15

26. $\sqrt{97}$ 10

Name the subset(s) of the real numbers to which each number belongs.

27. $\sqrt{77}$ irrational numbers

28. 4 natural numbers, whole numbers, integers, rational numbers

29. $\frac{2}{3}$ rational numbers

30. 0 whole numbers, integers, rational numbers

Extra Practice (continued)

Chapter 1

Order the numbers in each exercise from least to greatest.

31. $\sqrt{33}, \frac{25}{4}, 4.8, \sqrt{18}$ $\sqrt{18}, 4.8, \sqrt{33}, \frac{25}{4}$ 32. $\frac{69}{7}, \sqrt{69}, -9, \sqrt{79}$ $-9, \sqrt{69}, \sqrt{79}, \frac{69}{7}$

Is each statement *true* or *false*? If the statement is false, give a counterexample.

33. The product of a rational number and an integer is not an integer. **False; answers may vary.**
Sample: $\frac{3}{1} \cdot 2 = 6$.

34. The quotient of two integers is an integer. **False; answers may vary.** **Sample:** $2 \div 3 = \frac{2}{3}$.

35. The sum of two rational numbers is a rational number. **true**

Lesson 1-4

Simplify each expression. Justify each step.

36. $9 + 2p + 3$
 $9 + 2p + 3$
 $= 2p + 9 + 3$ **Comm. Prop. of Add.**
 $= 2p + (9 + 3)$ **Assoc. Prop. of Add.**
 $= 2p + 12$ **Add.**

37. $[4 + (-4)]y$
 $[4 + (-4)]y$
 $= 0 \cdot y$ **Inv. Prop. of Add.**
 $= 0$ **Mult. Prop. of Zero**

38. $3 + \frac{3}{18}\left(\frac{18}{3}\right)$
 $3 + \frac{3}{18}\left(\frac{18}{3}\right)$
 $= 3 + 1$ **Inv. Prop. of Mult.**
 $= 4$ **Add.**

39. $8 \cdot (2y)$
 $8 \cdot (2y)$
 $= (8 \cdot 2) \cdot y$ **Assoc. Prop. of Mult.**
 $= 16y$ **Multiply.**

Identify the property of real numbers shown in each situation.

40. The cost of one item sold for \$14.50 is \$14.50. **Ident. Prop. of Mult.**

41. You can find the cost of fish by multiplying the price per pound by the amount or by multiplying the amount by the price per pound. **Comm. Prop. of Mult.**

42. To find total time spent doing homework in a week, you add the amount from each day. You find that the total is the same no matter what order you use.
Comm. Prop. of Add.

Use deductive reasoning to tell whether each statement is *true* or *false*. If it is false, give a counterexample.

43. For all real numbers a and b , $a - b = b - a$. **false; sample: $5 - 2 \neq 2 - 5$**

44. For all real numbers x , $x \cdot 0 = 0$. **true**