

**Concept Check** Match each number from Column I with the letter or letters of the sets of numbers from Column II to which the number belongs. There may be more than one choice, so give all choices. See Example 1.

I

II

1. 0

2. 34

3.  $\frac{9}{4}$

4.  $\sqrt{36}$

5.  $\sqrt{13}$

6. 2.16

- A. Natural numbers  
B. Whole numbers  
C. Integers  
D. Rational numbers  
E. Irrational numbers  
F. Real numbers

7. Explain why no answer in Exercises 1–6 can contain both D and E as choices.
8. The number  $\pi$  is irrational. Yet 3.14 and  $\frac{22}{7}$  are often used as values for  $\pi$ . The first is a terminating decimal and the second is a quotient of integers, so both are rational. How is this possible?
9. **Concept Check** Give three examples of rational numbers that are not integers.
10. **Concept Check** Give three examples of integers that are not natural numbers.

Let set  $B = \{-6, -\frac{12}{4}, -\frac{5}{8}, -\sqrt{3}, 0, \frac{1}{4}, 1, 2\pi, 3, \sqrt{12}\}$ . List all the elements of  $B$  that belong to each set. See Example 1.

11. Natural numbers  
13. Integers

12. Whole numbers  
14. Rational numbers

Evaluate each expression. See Example 2.

15.  $-3^4$

16.  $-3^5$

17.  $(-3)^4$

18.  $-2^6$

19.  $(-3)^5$

20.  $(-2)^5$

21.  $-2 \cdot 3^4$

22.  $-4(-5)^3$