

Name \_\_\_\_\_

# Factors, Multiples, and Divisibility

R 3-1

You can use these divisibility rules to determine if a number is divisible by another number.

A whole number is divisible by	Examples
<b>2</b> if the ones digit is 0, 2, 4, 6, or 8.	2, 8, 24, 96, 300
<b>3</b> if the sum of the digits of the number is divisible by 3.	144 $1 + 4 + 4 = 9$ $9 \div 3 = 3$
<b>4</b> if the last two digits of the number are divisible by 4.	124 Last two digits are 24. $24 \div 6 = 4$
<b>5</b> if the ones digit is 0 or 5.	205; 300; 1,005; 270
<b>6</b> if the number is divisible by both 2 and 3.	522 Divisible by 2 because ones digit is 2 Divisible by 3 because $5 + 2 + 2 = 9$ $9 \div 3 = 3$
<b>9</b> if the sum of the digits of the number is divisible by 9.	3,123 $3 + 1 + 2 + 3 = 9$ $9 \div 9 = 1$
<b>10</b> if the ones digit is 0.	20; 40; 150; 2,570

Tell whether each number is divisible by 2, 3, 4, 5, 6, 9, or 10.

1. 25 \_\_\_\_\_      2. 32 \_\_\_\_\_      3. 124 \_\_\_\_\_

Tell whether the first number is a multiple of the second.

4. 45; 2 \_\_\_\_\_      5. 155; 5 \_\_\_\_\_  
6. 240; 6 \_\_\_\_\_      7. 320; 10 \_\_\_\_\_

8. **Number Sense** Name 3 factors of 40. \_\_\_\_\_

There are 100 members in the U.S. Senate. There are 435 members in the U.S. House of Representatives.

9. Is the total number of U.S. senators divisible by 2, 3, 4, 5, 6, 9, or 10?

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10. Could the members of the U.S. House of Representatives be evenly divided into committees with 3 members on each? 5 members on each? 8 members on each?

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Tell whether each number is divisible by 2, 3, 4, 5, 6, 9, or 10.

1. 27 \_\_\_\_\_                      2. 86 \_\_\_\_\_  
3. 348 \_\_\_\_\_                      4. 954 \_\_\_\_\_

Tell whether the first number is a multiple of the second.

5. 78; 2 \_\_\_\_\_                      6. 535; 3 \_\_\_\_\_

7. **Number Sense** Name 3 numbers that are factors of both 15 and 30. \_\_\_\_\_

The sixth graders at Washington Middle School researched the history of their city. The students then gave a presentation to the other students at the school.

8. If there were 64 sixth graders, list all of the ways they could have been divided equally into groups of 10 or fewer students.

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9. Only 60 sixth graders were present. Of the 60, 14 were needed to run the light and sound equipment during the presentation. How could the remaining students be divided into equal groups of 6 or fewer students to read the presentation?

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10. The 60 students were transported in vans to the high school to share their presentation. If the vans carry a maximum of 7 students each, what was the minimum number of vans required to carry the students to the high school? \_\_\_\_\_

## Test Prep

11. Which of the following numbers is divisible by both 9 and 4?

A. 24,815                      B. 18,324                      C. 9,140                      D. 9,126

12. **Writing in Math** If a number is divisible by both 2 and 6, is it always divisible by 12? Use examples in your answer.

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