



Name _____ Date _____

Divisibility Patterns (Pages 232–234)

If one number is a factor of a second number, then the second number is divisible by the first, or the second number is divisible by the factor.

Testing for Divisibility	<p>A number is divisible by</p> <ul style="list-style-type: none"> • 2 if the ones digit is divisible by 2. • 3 if the sum of the digits is divisible by 3. • 4 if the number formed by the last two digits is divisible by 4. • 5 if the ones digit is 0 or 5. • 6 if the number is divisible by both 2 and 3. • 8 if the number formed by the last three digits is divisible by 8. • 9 if the sum of the digits is divisible by 9. • 10 if the ones digit is 0.
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EXAMPLES

A Is 16 divisible by 6?

16 ends in 6, an even number, so 16 is divisible by 2. The sum of the digits of 16 is $1 + 6 = 7$ and 7 is not divisible by 3. So 16 is not divisible by 3. 16 is divisible by 2 but not 3, so it is not divisible by 6.

B Is 1,144 divisible by 8?

The number formed by the last three digits is 144. Is 144 divisible by 8? Yes, $8 \times 18 = 144$. So 1,144 is divisible by 8.

Try These Together

1. Determine if 64 is divisible by 2, 3, 4, 5, 6, 8, 9, or 10.

HINT: Apply each test. If a number is not divisible by 3, it cannot be divisible by 6 or 9.

2. Determine if 108 is divisible by 2, 3, 4, 5, 6, 8, 9, or 10.

HINT: If a number is not divisible by 5, it cannot be divisible by 10.

PRACTICE

Determine whether each number is divisible by 2, 3, 4, 5, 6, 8, 9, or 10.

3. 45

4. 22

5. 510

6. 1,224

7. 303

8. 3,580

9. 34

10. 435

11. Is 4 a factor of 384?

12. Is 10 a factor of 95?

13. Is 3,246 divisible by 3?

14. Is 98 divisible by 2?

15. **Business** Teresa has 125 refrigerator magnets that advertise her cleaning business. She can divide them evenly among her clients. What is the least number of clients she could have, assuming she has more than one?



16. **Standardized Test Practice** Which of the following three-digit numbers is divisible by both 2 and 3?

A 181

B 176

C 153

D 810

Answers: 1. 2, 4, 8 2. 2, 3, 4, 6, 9 3. 3, 5, 9 4. 2 5. 2, 3, 5, 6, 10 6. 2, 3, 4, 6, 8, 9 7. 3 8. 2, 4, 5, 10 9. 2 10. 3, 5 11. yes 12. no 13. yes 14. yes 15. 5 16. D