5-1

Name _____ Date _____

Divisibility Patterns (pages 178–180)

When you divide one whole number by a second whole number, and the quotient is a whole number, then the first whole number is divisible by the second. For example, 12 is divisible by 2 because the quotient $12 \div 2$ is 6, a whole number. You can test for divisibility mentally by using the divisibility rules below.

Divisibility Rules for 2, 3, 5, 6, 9, 10	A number is divisible by: • 2 if the ones digit is divisible by 2. • 3 if the sum of the digits is divisible by 3. • 5 if the ones digit is 0 or 5. • 6 if the number is divisible by both 2 and 3. • 9 if the sum of the digits is divisible by 9. • 10 if the ones digit is 0.

EXAMPLES

A Is 34 divisible by 2?

The ones digit is 4. Since $4 \div 2 = 2$, 4 is divisible by 2.

So, 34 is divisible by 2.

B Is 52 divisible by 3?

The sum of the digits is $5 + 2$, or 7. Since 7 is not divisible by 3, 52 is not divisible by 3.

Try These Together

1. Is 70 divisible by 5?

HINT: Is the ones digit 0 or 5?

2. Is 208 divisible by 9?

HINT: Is the sum of the digits divisible by 9?

PRACTICE

Determine whether the first number is divisible by the second number.

3. 984; 2 **4.** 533; 3 **5.** 935; 5

6. 570; 3 **7.** 2,861; 2 **8.** 626; 6

9. 5,650; 10 **10.** 8,844; 6 **11.** 77,787; 9

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

12. 365 **13.** 1,170 **14.** 887

15. 486 **16.** 620 **17.** 2,865

18. 350 **19.** 4,544 **20.** 51

21. Design The fourth grade class at Chavez Elementary School is having a group photo taken. There are 102 students in the fourth grade. Can they form 6 equal rows for the photo?

22. **Standardized Test Practice** Which number is divisible by both 2 and 9?

A 5,148 **B** 5,618 **C** 8,364 **D** 9,782

Answers: **1.** yes **2.** no **3.** yes **4.** no **5.** yes **6.** yes **7.** no **8.** no **9.** yes **10.** yes **11.** yes **12.** 5 **13.** 2, 3, 5, 6, 9, 10 **14.** none **15.** 2, 3, 6, 9 **16.** 2, 5, 10 **17.** 3, 5 **18.** 2, 5, 10 **19.** 2 **20.** 3 **21.** yes **22.** A