NAME_____

Module 1 **Number Sense**
Lesson 2 **Divisibility Rules**

Independent Practice 1.2

Determine if each number is divisible by 2, 4, 5, or 10.

1. 280
divisible by 2, 4, 5, and 10

2. 672
divisible by 2 and 4, not by 5 or 10

3. 865
divisible by 5, not by 2, 4, or 10

4. 1,200
divisible by 2, 4, 5, and 10

5. 5,508
divisible by 2 and 4, not by 5 or 10

6. 28,338
divisible by 2, not by 4, 5, or 10

Determine if each number is divisible by 3, 6, or 9.

7. 297
divisible by 3 and 9, not by 6

8. 886
not divisible by 3, 6, or 9

9. 1,188
divisible by 3, 6, and 9

10. 5,001
divisible by 3, not by 6 or 9

11. 8,340
divisible by 3 and 6, not by 9

12. 21,771
divisible by 3 and 9, not by 6

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

13. 256
divisible by 2 and 4, not by 3, 5, 6, 9, or 10

14. 774
divisible by 2, 3, 6, and 9, not by 4, 5, or 10

15. 3,975
divisible by 3 and 5, not by 2, 4, 6, 9, or 10

16. 8,826
divisible by 2, 3, and 6, not by 4, 5, 9, or 10

17. 15,990
divisible by 2, 3, 5, 6, and 10, not by 4 or 9

18. 61,098
divisible by 2, 3, and 6, not by 4, 5, 9, or 10

Journal

1. Explain why a number that is divisible by six is also divisible by two and three.
2. Identify and describe the characteristics of numbers that are divisible by all of the numbers 2, 3, 6, and 9.
3. Explain how to determine whether a number is divisible by 12. Describe the characteristics of numbers that are divisible by 12.
4. Is 1,368 divisible by 36? Justify your answer.

Cumulative Review

Evaluate each of the following.

1. $9 \times (25 - 14)$
99

2. $(16 + 23) \div (21 - 8)$
3

3. $42 - 3 \times (3 + 8)$
9

4. $12 + 28 \div 2^2$
19

5. $165 \div [5 \times (6 + 5)] + 15$
18

6. $(24 - 12)^2 \div (15 - 9)^2$
4

7. $6(7 + 5) \div 4(30 - 27)$
6

8. $2[(28 - 18)^2 - 3(10 + 12)]$
68

9. $4[(56 \div 8) + 3(5 + 6)] \div 4^2$
10

10. $[5 + (10)(4) + (12)(5)] \div [(5 - 1)^2 - 1]$
7

Possible Journal Answers

1. **Since $2 \times 3 = 6$, dividing a number by six is the same as dividing that number by two and then by three. If a number is divisible by six, the number can be divided into groups of six with no remainder. Each of those groups can then be divided into groups of three's or two's, so the original number is also divisible by two and three.**

2. **Since $2 \times 3 = 6$, and $3 \times 3 = 9$, ignore the 3 and 6 and concentrate on the 2 and 9. The smallest number divisible by 2 and 9 is 18. So, numbers divisible by 2, 3, 6, and 9 are divisible by 18. A number divisible by 18 has an even number in the one's place and the sum of its digits is divisible by 9.**

3. **Since $3 \times 4 = 12$, dividing a number by 12 is the same as dividing that number by 3 and then 4. So, numbers divisible by 3 and 4 are divisible by 12. A number is divisible by 12 if the sum of its digits is divisible by 3, and its last two digits are divisible by 4.**

4. **Since $4 \times 9 = 36$, dividing a number by 36 is the same as dividing that number by 9 and then 4. The number 1,368 is divisible by 4 because its last two digits are divisible by 4. The number 1,368 is divisible by 9 because the sum of its digits is divisible by 9. Since 1,368 is divisible by 4 and 9, it is divisible by 36.**