Name _____ Date _____

1.4 Practice A

Use divisibility rules to determine whether the number is divisible by 2, 3, 5, 6, 9, and 10. Use calculator to check your answers.

1. 1200 **2.** 1515 **3.** 1071

4. A baseball camp is held at a complex that has 6 baseball diamonds. The coaches would like each diamond to have the same number of campers. Use divisibility rules to determine whether this is possible if 152 kids show up for the camp.

List the factor pairs of the number.

5. 14 **6.** 26 **7.** 51

8. 18 **9.** 36 **10.** 47

Write the prime factorization of the number.

11. 9 **12.** 49 **13.** 28

14. 50 **15.** 66 **16.** 38

Find the number represented by the prime factorization.

17. $2^2 \cdot 5^2 \cdot 7$ **18.** $2^2 \cdot 3^2 \cdot 11$

Write the prime factorization of the number.

19. 144 **20.** 243 **21.** 475

22. A teacher divides the students into three groups for a project. Each group has the same number of students. Is the total number of students *prime* or *composite*? Explain.

23. The glee club has 120 cupcakes to sell. They have decided to arrange the cupcakes in the shape of a rectangle, such that the rows have an even number of cupcakes and the columns have an odd number of cupcakes. How many arrangements of cupcakes can they create? Explain.

24. Find composite numbers that have the following characteristics:

a. A number greater than 40 whose prime factorization contains 3 prime numbers that do not repeat.

b. A number greater than 1000 whose prime factorization contains 1 prime number that does not repeat, 1 prime number that repeats 3 times, and 1 prime number that repeats twice.

Name _____ Date _____

1.4 Practice B

Use divisibility rules to determine whether the number is divisible by 2, 3, 5, 6, 9, and 10. Use a calculator to check your answers.

1. 1035 **2.** 1830 **3.** 2061

List the factor pairs of the number.

4. 23 **5.** 44 **6.** 57

7. 32 **8.** 50 **9.** 61

10. Describe and correct the error in writing the factor pairs of 30.

$30 = 2 \cdot 15$
$30 = 3 \cdot 10$
$30 = 5 \cdot 6$

Write the prime factorization of the number.

11. 64 **12.** 40 **13.** 42

14. 72 **15.** 85 **16.** 91

Find the number represented by the prime factorization.

17. $3^2 \cdot 7 \cdot 11$ **18.** $5^2 \cdot 11^2 \cdot 17$

19. The prime factorization of a number is the product of the first 5 prime numbers. Find the number.

Write the prime factorization of the number.

20. 875 **21.** 256 **22.** 594

23. A friend is building a dog pen with an area of 150 square feet. Each side must be at least 5 feet long.

a. List all possible dimensions of the dog pen.

b. What is the maximum amount of fence required to build the dog pen? How much fence is required?

c. What dimensions would provide the longest running path for the dog?