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?

Name _____ Date _____

1.5 Practice B

Find the GCF of the numbers using lists of factors.

1. 15, 40
2. 32, 56
3. 34, 39
4. 21, 84
5. 60, 100
6. 48, 108

Find the GCF of the numbers using prime factorizations.

7. 34, 85
8. 72, 108
9. 80, 200
10. 42, 56
11. 22, 154
12. 90, 150

13. Describe and correct the error in finding the GCF of 10 and 18.

> ✗ $10 = 2 \cdot 5$
> $18 = 2 \cdot 3^2$
> The GCF is 90.

Find the GCF of the numbers.

14. 45, 51, 69
15. 20, 45, 55
16. 24, 84, 108

17. You are creating a set of three numbers that have a GCF of 9. You have 27 and 54 for two of the numbers.
    a. What is the GCF of 27 and 54?
    b. Find two numbers that you could add to the set of 27 and 54 such that the GCF is now 9.

18. Consider the numbers 308, 616, and 660.
    a. Find the prime factorization of each number.
    b. Find the GCF of each pair of numbers.
    c. Which pair of numbers has a different GCF than the other two pairs?

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1.6 Practice B

Find the LCM of the numbers using lists of multiples.

1. 9, 11
2. 6, 21
3. 15, 18
4. 24, 28
5. 12, 20
6. 8, 26

Find the LCM of the numbers using prime factorizations.

7. 14, 22
8. 16, 28
9. 18, 27
10. 12, 34
11. 10, 46
12. 21, 36

13. You run one lap around a mile track every 8 minutes. Your friend runs around the same track every 10 minutes. You both start at the starting line at the same time.

    a. How far have each of you run when you first meet again at the starting line?

    b. How far have each of you run the next time you meet at the starting line?

Find the LCM of the numbers.

14. 3, 7, 13
15. 5, 9, 12
16. 8, 14, 21

17. Plastic plates come in packs of 8, plastic utensils come in packs of 12, and plastic cups come in packs of 20. What are the least numbers of packs you should buy in order to have the same number of plates, utensils, and cups?

Tell whether the statement is *always*, *sometimes*, or *never* true.

18. The GCF of two different numbers is greater than the LCM of the numbers.

19. The LCM of a prime number and a composite number is a multiple of the prime number.

20. A theater gives away one free ticket to every 10th customer and two free tickets to every 25th customer. The manager wants to give away four free tickets when the customer is both a 10th and a 25th customer.

    a. Who is the first customer that will receive four free tickets?

    b. If 120 customers have bought tickets today, how many free tickets has the manager given away?

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Extension 1.6 Practice

Use the LCD to rewrite the fractions with the same denominator.

1. $\frac{3}{4}, \frac{1}{10}$
2. $\frac{2}{3}, \frac{5}{8}$
3. $\frac{5}{14}, \frac{1}{6}$
4. $\frac{1}{3}, \frac{5}{6}, \frac{4}{9}$

Copy and complete the statement using <, >, or =.

5. $\frac{3}{4} \_\_?\_\_ \frac{2}{3}$
6. $\frac{5}{12} \_\_?\_\_ \frac{4}{15}$
7. $3\frac{5}{18} \_\_?\_\_ 3\frac{7}{24}$
8. $\frac{18}{8} \_\_?\_\_ 2\frac{1}{4}$

Add or subtract. Write the answer in simplest form.

9. $\frac{1}{2} + \frac{3}{5}$
10. $\frac{4}{9} - \frac{1}{4}$
11. $\frac{5}{8} - \frac{3}{14}$
12. $\frac{7}{15} + \frac{3}{10}$
13. $4\frac{1}{8} + 3\frac{3}{4}$
14. $5\frac{7}{12} - 2\frac{2}{9}$
15. $1\frac{1}{3} + \frac{6}{7}$
16. $4\frac{11}{12} - 2\frac{3}{20}$

17. In which of Exercises 9–16 is the LCD the same as the product of the denominators? What characteristic do the denominators in this set of problems have that the other problems do not?