Name _____

Greatest Common Factor

R 3-3

Here are two different ways to find the greatest common factor (GCF) of 12 and 40.

List the Factors

Step 1: List the factors of each number.

12: 1, 2, 3, 4, 6, 12

40: 1, 2, 4, 5, 8, 10, 20, 40

Step 2: Circle the factors that the numbers have in common.

12: 1, (2) 3, (4) 6, 12

40: 1, (2) (4) 5, 8, 10, 20, 40

Step 3: Select the greatest factor the numbers have in common. The numbers have 2 and 4 in common, but 4 is greater.

The GCF is 4.

Use Prime Factorization

Step 1: List the prime factors of each number.

12: $2 \times 2 \times 3$

40: $2 \times 2 \times 2 \times 5$

Step 2: Circle the factors that the numbers have in common.

12: (2) × (2) × 3

40: (2) × (2) × 2 × 5

Step 3: Multiply the common prime factors.

$2 \times 2 = 4$

The GCF is 4.

Find the GCF for each set of numbers.

1. 10, 70 _____ **2.** 4, 20 _____ **3.** 18, 24 _____

4. 18, 90 _____ **5.** 36, 42 _____ **6.** 14, 28 _____

7. Number Sense Name two numbers that have a greatest common factor of 12.

_____

8. Name two numbers that have a greatest common factor of 9.

_____

9. Name two numbers that have a greatest common factor of 5.

_____

10. The swim team has 45 members and the diving team has 27 members. If the coaches wished to divide the teams into groups and have all of the groups from both teams be the same size, what is the greatest number of team members who could be in a group?

_____

Name _____

Greatest Common Factor

P 3-3

Find the GCF for each set of numbers.

1. 12, 48 _____ **2.** 20, 24 _____ **3.** 21, 84 _____

4. 24, 100 _____ **5.** 18, 130 _____ **6.** 200, 205 _____

7. Number Sense Name three pairs of numbers that have 5 as their greatest common factor. Use each number only once in your answer.

_____

8. The bake-sale committee divided each type of item evenly onto plates, so that every plate contained only one type of item and every plate had exactly the same number of items with no leftovers. What is the maximum number of items that could have been placed on each plate?

Bake Sale Donations	
Muffins	96
Bread sticks	48
Rolls	84

_____

9. Using this system, how many plates of rolls could the bake-sale committee make? _____

10. Using this system, how many plates of muffins could the bake-sale committee make? _____

Test Prep

11. Which of the following pairs of numbers is correctly listed with its greatest common factor?

A. 20, 24; GCF: 4 **B.** 50, 100; GCF: 25

C. 4, 6; GCF: 24 **D.** 15, 20; GCF: 10

12. Writing in Math Explain one method of finding the greatest common factor of 48 and 84.

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_____

_____

_____