

Common Factors and Greatest Common Factor

The greatest common factor (GCF) of two numbers is the greatest number that is a factor of both.

Find the greatest common factor of 12 and 18.

You can use arrays to find the factors of 12.

$1 \times 12 = 12$



$2 \times 6 = 12$



$3 \times 4 = 12$



Factors of 12 are 1, 2, 3, 4, 6, and 12.

You can use arrays to find the factors of 18.

$1 \times 18 = 18$



$2 \times 9 = 18$



$3 \times 6 = 18$



Factors of 18 are 1, 2, 3, 6, 9, and 18.

You can see that the common factors of 12 and 18 are 2, 3, and 6. The greatest common factor of 12 and 18 is 6.

Find the GCF of each pair of numbers.

1. 9, 27 9

2. 25, 40 5

3. 7, 36 1

4. 40, 48 8

5. **Number Sense** Can the GCF of 18 and 36 be greater than 18? Explain.

No. No number greater than 18 can be a factor of 18.

Common Factors and Greatest Common Factor

Find the GCF of each pair of numbers.

1. 15, 50 5

2. 6, 27 3

3. 10, 25 5

4. 18, 32 2

5. 7, 28 7

6. 54, 108 54

7. 25, 55 5

8. 14, 48 2

9. 81, 135 27

10. **Number Sense** Can the GCF of 16 and 42 be less than 16? Explain.

Yes; Sample answer: The greatest common factor will be less than 16, because 42 is not evenly divisible by 16.

11. A restaurant received a shipment of 42 gal of orange juice and 18 gal of cranberry juice. The juice needs to be poured into equal-sized containers. What is the largest amount of juice that each container can hold of each kind of juice?

6 gal

12. At a day camp, there are 56 girls and 42 boys. The campers need to be split into equal groups. Each has either all girls or all boys. What is the greatest number of campers each group can have?

14 campers

13. Which is the GCF of 24 and 64?

A 4

B 8

C 14

D 12

14. **Explain It** Do all even numbers have 2 as a factor? Explain.

Sample answer: Yes, because all even numbers are divisible by 2

Name _____

Enrichment

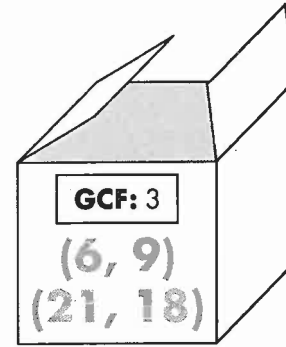
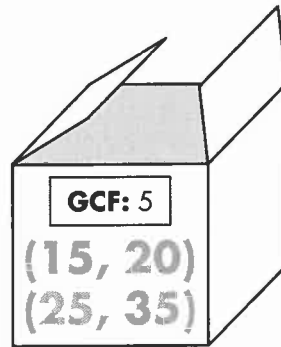
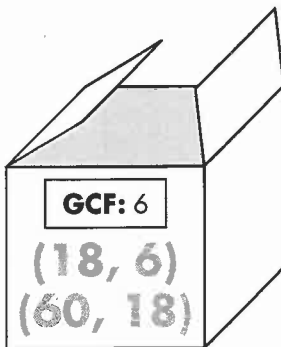
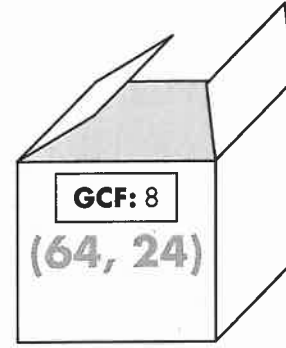
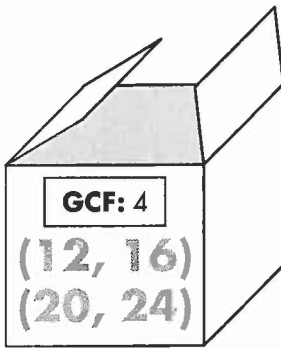
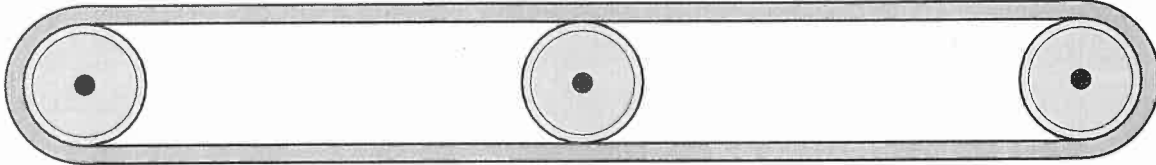
9-6

Greatest Common Factor-y

Decision Making

At the Greatest Common Factor-y, pairs of numbers are packaged according to their greatest common factor. The boxes below are being packed at the factory. Write the pairs of numbers from the conveyor belt on the boxes labeled with their greatest common factor.

(15, 20) (18, 6) (6, 9) (12, 16) (21, 28) (64, 24) (14, 35) (21, 18) (20, 24) (60, 18) (25, 35)



Enrichment 9-6