

LESSON

4-3

Practice C***Greatest Common Factor***

Find the GCF of each set of numbers.

1. 48 and 64

2. 72 and 81

3. 54 and 66

4. 56 and 80

5. 36 and 48

6. 32 and 232

7. 20, 44, and 88

8. 72, 96, and 84

9. 54, 60, and 78

10. 49, 84, and 91

11. 150, 200, and 300

12. 88, 96, and 120

13. 81, 108, and 117

14. $3^3 \cdot 4$ and $3^2 \cdot 4^2$

15. $2^2 \cdot 3 \cdot 5$ and $2^3 \cdot 3^3$

16. 2, 8, 16, and 40

17. 12, 15, 20, and 30

18. 5, 10, 15, and 25

19. Mrs. Hill is preparing for group art projects. She has 52 pipe cleaners, 78 pieces of colored paper, 91 cotton balls, and 117 strings of yarn. Each group will get the same number of each kind of art supply. What is the greatest number of groups that Ms. Hill can make if all the supplies are used? How many of each item will each group get?
- _____
- _____

20. Tony is making flower arrangements. He is using three different kinds of flowers—roses, daisies, and tulips. Each arrangement will have the same number of each kind of flower. He figures that if he uses all the flowers, the greatest number of arrangements he can make is 7. He has 42 flowers in all, with more daisies than tulips, and more tulips than roses. How many of each kind of flower does Tony have?
- _____

LESSON Practice A

4-3 Greatest Common Factor

Find the GCF of each set of numbers.

- | | | |
|--------------------------|--------------------------|--------------------------|
| 1. 6 and 9
<u>3</u> | 2. 4 and 8
<u>4</u> | 3. 8 and 12
<u>4</u> |
| 4. 6 and 15
<u>3</u> | 5. 10 and 15
<u>5</u> | 6. 9 and 12
<u>3</u> |
| 7. 4 and 10
<u>2</u> | 8. 5 and 20
<u>5</u> | 9. 7 and 14
<u>7</u> |
| 10. 8 and 11
<u>1</u> | 11. 2 and 12
<u>2</u> | 12. 9 and 21
<u>3</u> |

Circle the letter of the correct answer.

13. For which set of numbers is 6 the GCF?
A 2, 3, and 6
B 3, 6, and 12
C 12, 18, and 24
D 1, 6, and 12
14. For which set of numbers is 4 the GCF?
F 1, 4, and 8
G 2, 4, and 16
H 1, 2, and 4
J 8, 12, and 16
15. Bonny has 24 wood beads and 30 glass beads. She wants each necklace she makes to have the same number of wood beads and the same number of glass beads. What is the greatest number of necklaces she can make if all the beads are used?
6 necklaces
16. Mike is setting up fish tanks at the pet store. He has 6 angel fish, 12 tiger barbs, and 15 guppies. If he wants to have the same number of each kind of fish in every tank, what is the greatest number of tanks he can set up?
3 fish tanks

LESSON Practice B

4-3 Greatest Common Factor

Find the GCF of each set of numbers.

- | | | |
|---------------------------------|--------------------------------|---------------------------------|
| 1. 12 and 15
<u>3</u> | 2. 18 and 24
<u>6</u> | 3. 15 and 25
<u>5</u> |
| 4. 16 and 24
<u>8</u> | 5. 36 and 45
<u>9</u> | 6. 24 and 54
<u>6</u> |
| 7. 48 and 64
<u>16</u> | 8. 27 and 72
<u>9</u> | 9. 55 and 77
<u>11</u> |
| 10. 16, 28, and 48
<u>4</u> | 11. 15, 35, and 95
<u>5</u> | 12. 20, 30, and 80
<u>10</u> |
| 13. 18, 36, and 54
<u>18</u> | 14. 27, 36, and 45
<u>9</u> | 15. 21, 49, and 63
<u>7</u> |
| 16. 25, 35, and 45
<u>5</u> | 17. 28, 42, and 63
<u>7</u> | 18. 25, 75, and 115
<u>5</u> |

19. Mr. Thompson's sixth-grade class is competing in the school field day. There are 16 boys and 12 girls in his class. He divided the class into the greatest number of teams possible with the same number of boys on each team and the same number of girls on each team. How many teams were made if each person was on a team? How many girls were on each team? How many boys?

4 teams with 3 girls and 4 boys on each team

20. Barbara is making candy bags for her birthday party. She has 24 lollipops, 12 candy bars, and 42 pieces of gum. She wants each bag to have the same number of each kind of candy. What is the greatest number of bags she can make if all the candy is used? How many pieces of each kind of candy will be in each bag?

6 bags with 4 lollipops, 2 candy bars, and 7 pieces of gum in each bag

LESSON Practice C

4-3 Greatest Common Factor

Find the GCF of each set of numbers.

- | | | |
|----------------------------------|--|--|
| 1. 48 and 64
<u>16</u> | 2. 72 and 81
<u>9</u> | 3. 54 and 66
<u>6</u> |
| 4. 56 and 80
<u>8</u> | 5. 36 and 48
<u>12</u> | 6. 32 and 232
<u>8</u> |
| 7. 20, 44, and 88
<u>4</u> | 8. 72, 96, and 84
<u>12</u> | 9. 54, 60, and 78
<u>6</u> |
| 10. 49, 84, and 91
<u>7</u> | 11. 150, 200, and 300
<u>50</u> | 12. 88, 96, and 120
<u>8</u> |
| 13. 81, 108, and 117
<u>9</u> | 14. $3^3 \cdot 4$ and $3^2 \cdot 4^2$
<u>36</u> | 15. $2^2 \cdot 3 \cdot 5$ and $2^3 \cdot 3^3$
<u>12</u> |
| 16. 2, 8, 16, and 40
<u>2</u> | 17. 12, 15, 20, and 30
<u>1</u> | 18. 5, 10, 15, and 25
<u>5</u> |

19. Mrs. Hill is preparing for group art projects. She has 52 pipe cleaners, 78 pieces of colored paper, 91 cotton balls, and 117 strings of yarn. Each group will get the same number of each kind of art supply. What is the greatest number of groups that Ms. Hill can make if all the supplies are used? How many of each item will each group get?
13 groups with 4 pipe cleaners, 6 pieces of colored paper, 7 cotton balls, and 9 strings of yarn for each group

20. Tony is making flower arrangements. He is using three different kinds of flowers—roses, daisies, and tulips. Each arrangement will have the same number of each kind of flower. He figures that if he uses all the flowers, the greatest number of arrangements he can make is 7. He has 42 flowers in all, with more daisies than tulips, and more tulips than roses. How many of each kind of flower does Tony have?
He has 21 daisies, 14 tulips, and 7 roses.

LESSON Reteach

4-3 Greatest Common Factor

The greatest common factor, or GCF, is the largest number that is the factor of any set of at least two numbers.

You can use prime factorization to find the GCF of two or more numbers.

To find the GCF of 18 and 24, first write the prime factorization of each number. Then identify the common prime factors.

$$18 = 2 \cdot 3 \cdot 3$$

$$24 = 2 \cdot 2 \cdot 2 \cdot 3$$

Next, find the product of the common prime factors.

$$2 \cdot 3 = 6$$

The GCF of 18 and 24 is 6.

Find the GCF of each set of numbers.

- | | | |
|--|--|---|
| 1. 32 and 48
32 = <u>2^5</u>
48 = <u>$2^4 \cdot 3$</u>
<u>16</u> | 2. 45 and 81
45 = <u>$3^2 \cdot 5$</u>
81 = <u>3^4</u>
<u>9</u> | 3. 18 and 36
18 = <u>$2 \cdot 3^2$</u>
36 = <u>$2^2 \cdot 3^2$</u>
<u>18</u> |
| 4. 14 and 35
14 = <u>$2 \cdot 7$</u>
35 = <u>$5 \cdot 7$</u>
<u>7</u> | 5. 42 and 72
42 = <u>$2 \cdot 3 \cdot 7$</u>
72 = <u>$2^3 \cdot 3^2$</u>
<u>6</u> | 6. 56 and 64
56 = <u>$2^3 \cdot 7$</u>
64 = <u>2^6</u>
<u>8</u> |
| 7. 28, 56, and 84
28 = <u>$2^2 \cdot 7$</u>
56 = <u>$2^3 \cdot 7$</u>
84 = <u>$2^2 \cdot 3 \cdot 7$</u>
<u>28</u> | 8. 30, 45, and 75
30 = <u>$2 \cdot 3 \cdot 5$</u>
45 = <u>$3^2 \cdot 5$</u>
75 = <u>$3 \cdot 5^2$</u>
<u>15</u> | 9. 36, 45, and 54
36 = <u>$2^2 \cdot 3^2$</u>
45 = <u>$3^2 \cdot 5$</u>
54 = <u>$2 \cdot 3^3$</u>
<u>9</u> |