

1.38

Greatest Common Factor

• Example 1

Find the GCF of 40 and 60.

Write the prime factorizations of 40 and 60.

$$40 = 2 \times 2 \times 2 \times 5$$

$$60 = 2 \times 2 \times 3 \times 5$$

Gather the common factors.

$$40 = (2 \times 2 \times 5) \times 2 = 20 \times 2$$

$$60 = (2 \times 2 \times 5) \times 3 = 20 \times 3$$

The GCF of 40 and 60 is 20.

● ● ● CHECK YOURSELF 1

Find the GCF of 30 and 36.

• Example 2

Find the greatest common factor of 15 and 28.

$$15 = 3 \times 5$$

$$28 = 2 \times 2 \times 7$$

There are no common prime factors listed. But remember that 1 is a factor of every whole number.

If two numbers, such as 15 and 28, have no common factor other than 1, they are called **relatively prime**.

The greatest common factor of 15 and 28 is 1.

● ● ● CHECK YOURSELF 2

Find the greatest common factor of 30 and 49.

● ● ● CHECK YOURSELF ANSWERS

1. 6.
 2. GCF is 1; 30 and 49 are relatively prime.
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1.38 Exercises

Name _____

Section _____

Date _____

Find the greatest common factor (GCF) for each of the following groups of numbers.

1. 4 and 6

2. 6 and 9

3. 10 and 15

4. 12 and 14

5. 21 and 24

6. 22 and 33

7. 20 and 21

8. 28 and 42

9. 18 and 24

10. 35 and 36

11. 18 and 54

12. 12 and 48

A N S W E R S

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

11. _____

12. _____

A N S W E R S

13. _____

13. 36 and 48

14. 36 and 54

14. _____

15. _____

16. _____

17. _____

15. 84 and 105

16. 70 and 105

18. _____

19. _____

20. _____

21. _____

17. 16 and 20

18. 15 and 20

22. _____

23. _____

24. _____

19. 24 and 42

20. 15 and 16

21. 21 and 25

22. 30 and 40

23. 36 and 48

24. 40 and 56