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# Factoring Greatest Common Factor Worksheet Answer Key PDF

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## Part 1: Foundational Knowledge

**What is the Greatest Common Factor (GCF) of 12 and 18?**

undefined. A) 2

undefined. B) 3

**undefined. C) 6** ✓

undefined. D) 9

The GCF of 12 and 18 is 6.

**Which of the following methods can be used to find the GCF?**

**undefined. A) Prime Factorization** ✓

**undefined. B) Listing Factors** ✓

**undefined. C) Euclidean Algorithm** ✓

undefined. D) Polynomial Division

All listed methods can be used to find the GCF.

**Which of the following methods can be used to find the GCF?**

**undefined. A) Prime Factorization** ✓

**undefined. C) Euclidean Algorithm** ✓

undefined. D) Polynomial Division

**undefined. C) Listing Factors** ✓

All listed methods can be used to find the GCF.

**Which of the following methods can be used to find the GCF?**

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undefined. **A) Prime Factorization** ✓

undefined. **C) Euclidean Algorithm** ✓

undefined. D) Polynomial Division

undefined. **C) Listing Factors** ✓

Methods to find the GCF include Prime Factorization, Listing Factors, and the Euclidean Algorithm.

**Explain in your own words what the Greatest Common Factor is and why it is important in mathematics.**

**The GCF is the largest number that divides two or more numbers without a remainder, important for simplifying fractions and finding common denominators.**

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**Explain in your own words what the Greatest Common Factor is and why it is important in mathematics.**

**The GCF is the largest number that divides two or more numbers without leaving a remainder, important for simplifying fractions.**

**List the prime factors of 24 and 36.**

1. Prime factors of 24

**2, 2, 2, 3**

2. Prime factors of 36

**2, 2, 3, 3**

The prime factors of 24 are 2, 2, 2, 3 and for 36 are 2, 2, 3, 3.

**Which of the following is NOT a use of the GCF?**

undefined. A) Simplifying fractions

undefined. **B) Solving linear equations** ✓

undefined. C) Factoring polynomials

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undefined. D) Equal distribution in real-world problems

Solving linear equations is not a direct use of the GCF.

## Part 2: comprehension

**Which statements are true about the GCF?**

**undefined. A) It is always less than or equal to the smallest number. ✓**
**undefined. B) It can be used to simplify fractions. ✓**
undefined. C) It is the product of all common prime factors.
undefined. D) It is always greater than or equal to the largest number.

The GCF is always less than or equal to the smallest number and can be used to simplify fractions.

**Which statements are true about the GCF?**

**undefined. A) It is always less than or equal to the smallest number. ✓**
undefined. C) It is the product of all common prime factors.
undefined. D) It is always greater than or equal to the largest number.
**undefined. C) It can be used to simplify fractions. ✓**

Statements A and B are true about the GCF.

**Which statements are true about the GCF?**

**undefined. A) It is always less than or equal to the smallest number. ✓**
undefined. C) It is the product of all common prime factors.
undefined. D) It is always greater than or equal to the largest number.
**undefined. C) It can be used to simplify fractions. ✓**

The GCF is always less than or equal to the smallest number and can be used to simplify fractions.

**Describe how you would use the Euclidean Algorithm to find the GCF of 56 and 98.**

**The Euclidean Algorithm involves repeated division and finding remainders until reaching a remainder of 0.**

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**Describe how you would use the Euclidean Algorithm to find the GCF of 56 and 98.**

**The Euclidean Algorithm involves repeated division to find the GCF.**

**What is the GCF of a number and itself?**

undefined.  A) 0
undefined.  B) 1
**undefined.  C) The number itself ✓**
undefined.  D) Cannot be determined

The GCF of a number and itself is the number itself.

**What is the GCF of a number and itself?**

undefined.  A) 0
**undefined.  C) The number itself ✓**
undefined.  D) Cannot be determined
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**What is the GCF of a number and itself?**

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**undefined.  C) The number itself ✓**
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The GCF of a number and itself is the number itself.

## Part 3: Application and Analysis

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**A recipe calls for 12 cups of flour and 18 cups of sugar. What is the largest batch size you can make using the GCF, and how much of each ingredient will you use?**

The largest batch size is 6 cups, using 2 cups of flour and 3 cups of sugar.

**A recipe calls for 12 cups of flour and 18 cups of sugar. What is the largest batch size you can make using the GCF, and how much of each ingredient will you use?**

The largest batch size is 6 cups of flour and 9 cups of sugar.

**A recipe calls for 12 cups of flour and 18 cups of sugar. What is the largest batch size you can make using the GCF, and how much of each ingredient will you use?**

The largest batch size is 6 cups, using 6 cups of flour and 9 cups of sugar.

**If you simplify the fraction 42/56 using the GCF, what is the resulting fraction?**

undefined. A) 3/4 ✓

undefined. B) 6/7

undefined. C) 5/8

undefined. D) 7/8

The resulting fraction is 3/4.

**If you simplify the fraction 42/56 using the GCF, what is the resulting fraction?**

undefined. A) 3/4 ✓

undefined. C) 5/8

undefined. D) 7/8

undefined. C) 6/7

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**If you simplify the fraction 42/56 using the GCF, what is the resulting fraction?**

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undefined.  C) 6/7

The resulting fraction is 3/4.

**Analyze the relationship between the GCF and the Least Common Multiple (LC M) of two numbers. How are they connected?**

**The GCF and LCM are related through the product of two numbers, where GCF × LCM = product of the numbers.**

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**GCF and LCM are related through the product of two numbers.**

**Analyze the relationship between the GCF and the Least Common Multiple (LC M) of two numbers. How are they connected?**

**The GCF and LCM are related through the product of two numbers.**

**Which of the following pairs of numbers have a GCF of 1, indicating they are coprime?**

undefined.  A) 14 and 21
**undefined.  B) 15 and 28 ✓**
undefined.  C) 9 and 27
undefined.  D) 10 and 25

The pair 15 and 28 have a GCF of 1, indicating they are coprime.

**Which of the following pairs of numbers have a GCF of 1, indicating they are coprime?**

undefined.  A) 14 and 21
undefined.  C) 9 and 27
undefined.  D) 10 and 25
**undefined.  C) 15 and 28 ✓**

The pair 15 and 28 are coprime.

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**Which of the following pairs of numbers have a GCF of 1, indicating they are coprime?**

undefined. A) 14 and 21

undefined. C) 9 and 27

undefined. D) 10 and 25

**undefined. C) 15 and 28 ✓**

Pairs with a GCF of 1 are coprime.

## Part 4: Evaluation and Creation

**Evaluate the effectiveness of using the Euclidean Algorithm versus prime factorization for finding the GCF of large numbers. Which method do you find more efficient and why?**

**The Euclidean Algorithm is often more efficient for large numbers.**

**Evaluate the effectiveness of using the Euclidean Algorithm versus prime factorization for finding the GCF of large numbers. Which method do you find more efficient and why?**

**The Euclidean Algorithm is often more efficient for large numbers compared to prime factorization, which can be cumbersome.**

**Evaluate the effectiveness of using the Euclidean Algorithm versus prime factorization for finding the GCF of large numbers. Which method do you find more efficient and why?**

**The Euclidean Algorithm is often more efficient for large numbers compared to prime factorization.**

**After factoring the polynomial 3x^2 + 6x, what is the GCF of the terms?**

undefined. A) x

undefined. B) 3

**undefined. C) 3x ✓**

undefined. D) 6

The GCF of the terms is 3x.

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**After factoring the polynomial 3x^2 + 6x, what is the GCF of the terms?**

undefined. A) x

**undefined. C) 3x ✓**

undefined. D) 6

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The GCF of the terms is 3x.

**After factoring the polynomial 3x^2 + 6x, what is the GCF of the terms?**

undefined. A) x

undefined. C) 3

undefined. D) 6

**undefined. C) 3x ✓**

The GCF of the terms is 3x.

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