

Which number is NOT a common multiple of 4 and 8? Explain in 2-3 sentences why (you can provide examples and draw a model).

- A. 16
- B. 24
- C. 28
- D. 32
- E. 48

GCF & LCM

CMP3: Mathematics
Background

Vocabulary - Recab from 5th grade

- **Prime Number** - have exactly two factors, 1 and itself.
- **Composite Number** - divided evenly by numbers other than one and itself.
- **Even Number** - have a factor of two or are divisible by two
- **Odd Numbers** - do not have a factor of two or are not divisible by two.
- **Square Number** - also known as perfect square. It is the product of some integer with itself.

Vocabulary

- **Factor** – a number or quantity that when multiplied with another produces a given number or expression.
- **Multiple** – a number that can be divided by another number without a remainder.
- **Factor Pair** – a set of two numbers, which when multiplied result in a definite number.

Vocabulary

- **Greatest Common Factor (GCF)** - The greatest factor that divides two numbers.
- **Least Common Multiple (LCM)** - The smallest number that they both divide evenly into.

Let's take a look at Factors and Multiples

We know that $3 \times 4 = 12$.

But what does this mean exactly?

This means that 3 is a factor of 12 and that 4 is a factor of 12. Therefore, 3 and 4 are a factor pair because their product is equal to 12.

Let's take a look at Factors and Multiples

3

×

4

=

12

3 is a factor of 12.
3 is a divisor of 12.

4 is a factor of 12.
4 is a divisor of 12.

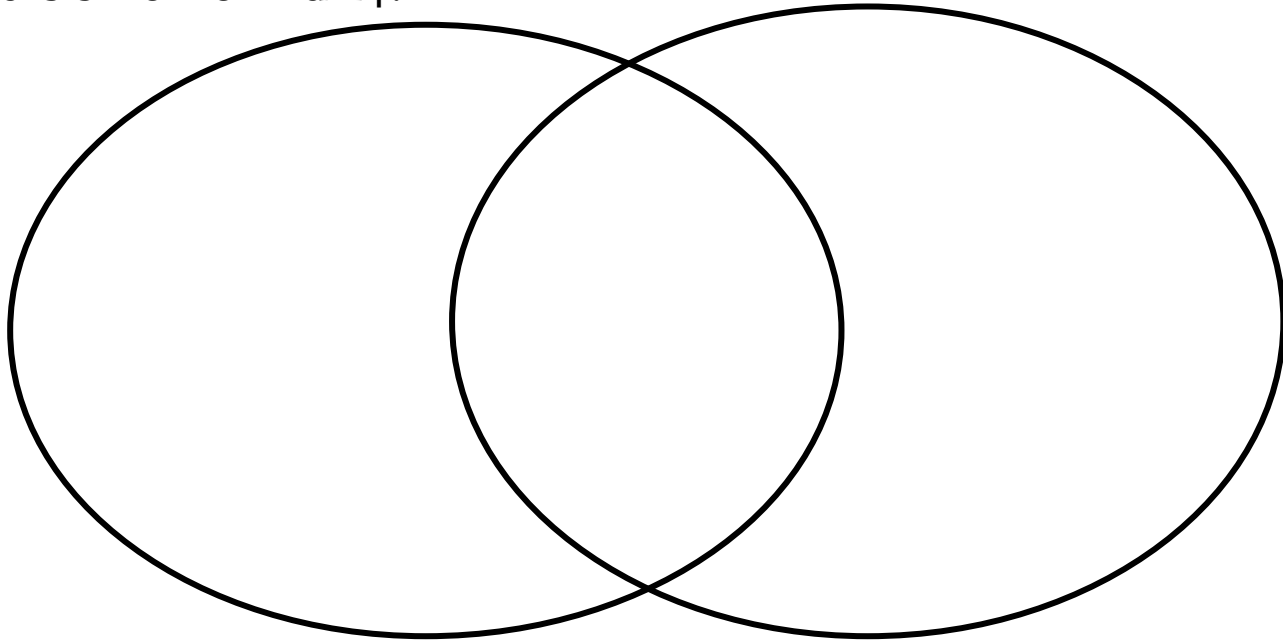
12 is the product of 3 and 4.
12 is a multiple of 3.
12 is a multiple of 4.
12 is divisible by 3.
12 is divisible by 4.

Tricks to finding GCF

- ★ Use a Venn Diagram to find the common factors
- ★ Identify the largest factor as the GCF

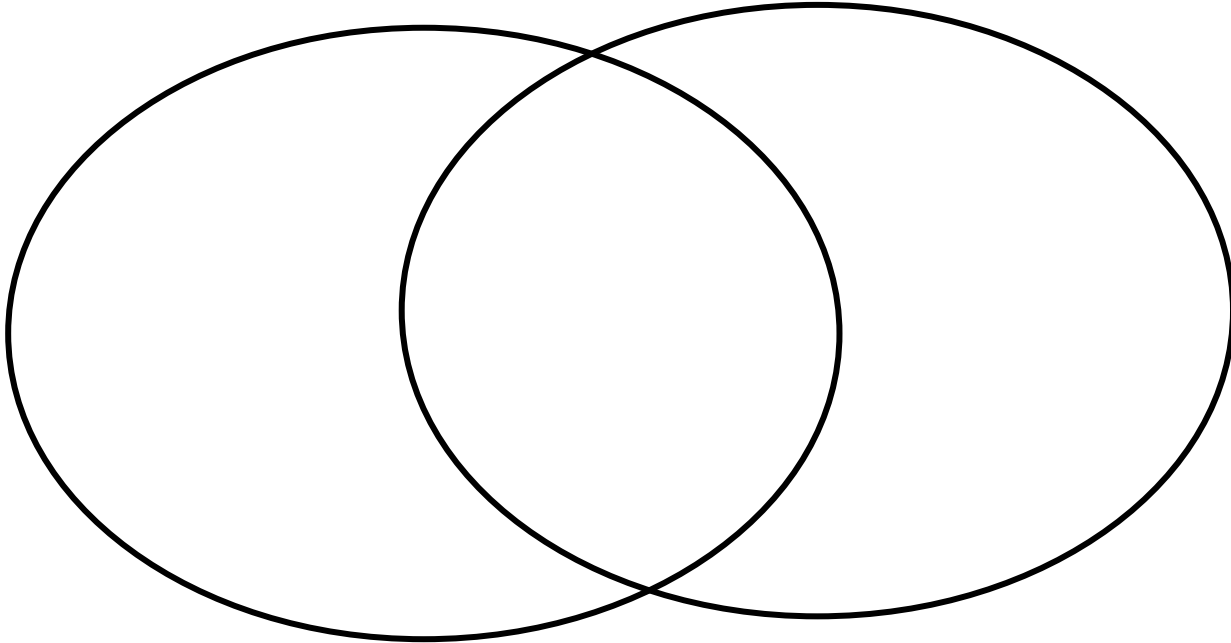
Creating a Venn Diagram to find GCF

What is the GCF of 18 and 24?



Example 2

What is the greatest common factor (GCF) of 12 and 54?



Trick to finding LCM

- ★ Multiply both numbers by 1, 2, 3, 4, 5, and then find the multiple that appears in both lists.
- ★ That number, is your LCM.

Example 1

What is the LCM of 3 and 5?

Example 2

Matt has 7 red balls. Clara has 14 green balls. Erick has 10 blue balls. Find the LCM of these numbers.

- a.) 7
- b.) 33
- c.) 145
- d.) 70

Example 3

Pencils come in packages of 10. Erasers come in packages of 12. Joe wants to purchase the smallest number of pencils and erasers, so that he will have exactly 1 eraser per pencil. How many packages of pencils and erasers should Joe buy?

Homework

GCF and LCM Practice

G C F

AND

L C M

Distributive Property

Vocabulary

Distributive Property - Multiplying a number by a group of numbers added together.

Equivalent Expression - expressions that are the same, even though they look different.

Let's Review

★ Any number can be written as a sum of two (or more) numbers.

Example:

15

1 + 14

Let's Review

- ★ A factor of a multiplication expression can be written as the sum of two numbers.

Example:


$$\begin{array}{r} 5 \times 13 \\ 5 \times (10 + 3) \end{array}$$

- ★ Parentheses can be used to show multiplication

Example: $5 \times (10 + 3) = 5(10 + 3)$

Distributive Property

If we want to write an equivalent expression for multiplying 5×13 , we can use the Distributive Property.


$$5(10 + 3) = (5 \times 10) + (5 \times 3)$$

Using Distributive Property

How can the Distributive Property help us to write an equivalent expression using the GCF for $24 + 9$?

1. Find the GCF for 24 and 9
2. Rewrite the expression $24 + 9$ using the factor pairs with the GCF
3. Take out the GCF and multiply by it by the two addends.

Example: $24 + 9$

Example 1

Use the distributive property to write an equivalent expression using the GCF for $15 + 45$.

Example 2

Use the distributive property to write an equivalent expression using the GCF for $6 + 8$.

Homework

Distributive Property Practice

