GCF and LCM Problem Solving

How can you tell if a word problem requires you to use Greatest Common Factor or Least Common Multiple to solve?

Read the problem carefully…

- Does it ask us to split things into smaller sections?
- Does it ask us to arrange something into rows or groups?

If so, use the Greatest Common Factor.

GCF Example:

Samantha has two pieces of cloth. One piece is 72 inches wide and the other piece is 90 inches wide. She wants to cut both pieces into strips of equal width that are as wide as possible. How wide should she cut the strips?

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- **What we know:** The pieces of cloth are 72 and 90 inches wide.
- **The question:** How wide should she cut the strips so that they are the largest possible equal lengths.

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- This problem can be solved using Greatest Common Factor because we are cutting or “dividing” the strips of cloth into smaller pieces (factor) of 72 and 90.
- Find the GCF of 72 and 90

GCF Word Problem Solution

Samantha should cut each piece to be 18 inches wide.

Read the problem carefully…

- Do we have an event that is or will be repeating over and over?
- Will we have to purchase or get multiple items in order to have enough?
- Are we trying to figure out when something will happen again at the same time?

If so, use the Least Common Multiple.

LCM Example

Ben exercises every 3 days and Isabel exercises every 2 days. Ben and Isabel both exercised today. How many days in the next 30 days will they both exercise on the same day?

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- Find the Least Common Multiple of 3 and 2 and apply it to the question asked.

LCM Word Problem Solution

- Ben and Isabel would exercise on the same day every 6th day.
- In 30 days, they would exercise together 5 times (because 30 divided by 6 is 5).

You Try!!!!!!

Tell whether the following word problems could be solved using GCF or LCM…

Question #1

Mrs. Evans has 120 crayons and 30 pieces of paper to give to her students. What is the largest number of students she can have in her class so that each student gets and equal number of crayons and an equal amount of paper.

GCF

Question #2

Rosa is making a game board that is 16 inches by 24 inches. She wants to use square tiles. What is the largest tile she can use?

GCF

Question #3

Star 94 gave away a discount coupon for every fifth and sixth caller. Every twentieth caller received free concert tickets. Which caller was first to receive both a coupon and a concert ticket?

LCM

Question #4

Two bikers are riding a circular path. The first rider completes a round in 12 minutes. The second rider completes a round in 18 minutes. If they both started at the same place and time and go in the same direction, after how many minutes will they meet again at the starting point?

LCM

Question #5

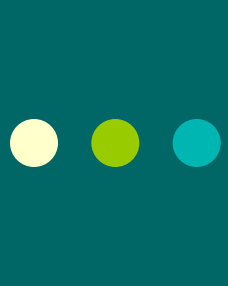
Sean has 15-inch pieces of toy train track and Ruth has 6-inch pieces of train track. How many of each piece would each child need to build tracks that are equal in length?

LCM

Question #6

I am planting 50 apple trees and 30 peach trees. I want the same number and type of trees per row. What is the maximum number of trees I can plant per row?

GCF



The End