

Warm Up Questions

Calculate the GCF and LCM for
83160 & 26460

Greatest Common Factor

$$\begin{array}{l} 83160 \rightarrow 2 \times 2 \times 2 \times 3 \times 3 \times 3 \times 5 \times 7 \times 11 \\ 26460 \rightarrow 2 \times 2 \times 3 \times 3 \times 3 \times 5 \times 7 \times 7 \end{array}$$

$$\underline{2} \times \underline{2} \times \underline{3} \times \underline{3} \times \underline{3} \times \underline{5} \times \underline{7}$$

$$= 3780$$

Least Common Multiple

$$83\ 160 \rightarrow 2 \times 2 \times 2 \times 3 \times 3 \times 3 \times 5 \times 7 \times 11$$

$$26\ 460 \rightarrow 2 \times 2 \times 3 \times 3 \times 3 \times 5 \times 7 \times 7$$

$$83\ 160 \rightarrow 2^3 \times 3^3 \times 5 \times 7 \times 11$$

$$26\ 460 \rightarrow 2^2 \times 3^3 \times 5 \times 7^2 \times 11^0$$

$$= 2^3 \times 3^3 \times 5 \times 7^2 \times 11$$

$$= 8 \times 27 \times 5 \times 49 \times 11$$

$$= 582\ 210$$

If it is an LCM Problem

- What is the question asking us?
- 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?

Example

2

- Are we trying to figure out when something will happen again at the same time?
- Will my answer be larger than the original numbers in the question?



If it is a GCF Problem

- What is the question asking us?
- Example #1 ○ Do we have to split things into smaller sections?
- Are we trying to figure out how many people we can invite?
- Are we trying to arrange something into rows or groups?
- Will my answer be the same or smaller than the original numbers in the question?

GCF Problem

- 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?

$$72 \rightarrow 2 \times 2 \times 2 \times 3 \times 3$$

$$90 \rightarrow 2 \times 3 \times 3 \times 5$$

She should cut the strips 18 inches wide

$$\text{GCF} = 2 \times 3 \times 3$$

$$\text{GCF} = 18$$

LCM Problem

- Ben exercises every 12 days and Isabel every 8 days. Ben and Isabel both exercised today. How many days will it be until they exercise together again?

$$8 \rightarrow 2 \times 2 \times 2 \rightarrow 2^3 \times 3^0$$

$$12 \rightarrow 2 \times 2 \times 3 \rightarrow 2^2 \times 3^1$$

$$\begin{aligned} \text{LCM} &= 2^3 \times 3 \\ &= 8 \times 3 \\ &= 24 \end{aligned}$$

Ben and Isabel will exercise together in 24 days.

Homework

1-8 on worksheet

① 150

⑤ 4

② 30

⑥ 3

③ 40 days

⑦ 56 days

④ 2

⑧ 200 seconds

Warm Up

- a) What is the side length of the smallest square that could be tiled with rectangles that measure 154 cm by 196 cm? Assume the rectangles cannot be cut. Sketch the square and rectangles.



- b) What is the side length of the largest square that could be used to tile a rectangle that measures 72 cm by 96 cm? Assume that the squares cannot be cut. Sketch the rectangle and squares.



Warm Up

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