Assignment

Write

Write a definition for each term in your own words.

1. least common multiple (LCM)
2. greatest common factor (GCF)

Remember

Common factors help determine how to divide or share things equally. Common multiples help determine how things with different cycles can occur at the same time.

Practice

Read and solve each problem.

1. Two machines in a car parts factory mold different parts that will eventually be put together in an assembly plant. The first machine makes a part every 12 seconds, and the second machine makes a part every 45 seconds. The quality control engineer tests these parts each time they both come out of the machines at the same time. How often does she test the parts? Show your work and express your answer in minutes.

2. Mr. Ellis runs an after-school program for nine- and ten-year-olds. Each day the children participate in an activity or sport and receive a snack. One afternoon, 56 nine-year-olds and 42 ten-year-olds attend the after-school program.

   a. Mr. Ellis wants to divide the group into basketball teams so that each team has the same number of nine-year-olds, and each team has the same number of ten-year-olds. How many different ways can he divide the group?

   b. What is the greatest number of teams Mr. Ellis can make so each team has the same number of 9-year-olds and the same number of 10-year-olds?

   c. Do you think Mr. Ellis should make the greatest number of teams he can? Explain your reasoning.

3. Dr. Abramson is working on 3 different experiments using water. Each experiment lasts for 15 minutes. For the first experiment, she checks the water level every 12 seconds. For the second experiment, she checks every 30 seconds. For the third experiment, she checks every 36 seconds. List the time in minutes that Dr. Abramson will check all 3 experiments at the same time.
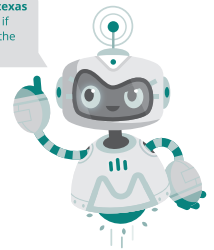
4. The students in an art class have blue cloth that is 60 inches long, gold cloth that is 48 inches long, and white cloth that is 72 inches long. They want to cut all the cloth into pieces of equal length for a project.

   a. What is the greatest possible length of the pieces without having any cloth left over? Explain your reasoning.

   b. How many pieces of each color cloth will they have?

5. Boxes that are 16 inches tall are being stacked next to boxes that are 20 inches tall.

   a. What is the shortest height at which the two stacks will be the same height? Explain your reasoning.

   b. How many boxes will be in each stack?

Stretch

1. An amusement park gives away gifts to celebrate its grand opening. Every 2nd visitor will receive a sticker, every 5th visitor will receive a hat, every 8th visitor will receive a T-shirt, and every 50th visitor will receive a ticket to use on a return visit. How often will a visitor receive all four gifts?

Review

1. Determine the area of the rectangle.

   15 ft
   8 ft
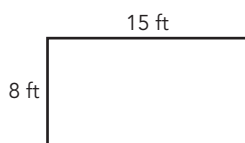
2. Determine the area of a square picture that has a side length of 14 cm.

3. Construct a factor tree and write the prime factorization for each number.

   a. 48   b. 63

4. Determine the LCM or GCF for each.

   a. LCM(6, 8)   b. GCF(24, 30)

5. Use the Distributive Property to write an equivalent addition expression for $5(17 + 20)$.