

Factors, Multiples and Common Ones: GCF and LCM

Grade 6 math · Worksheet · Standards: 6.NS.B.4

Name: _____ Date: _____ Class: _____

These 20 problems build skill with factors, multiples, prime factorization, the greatest common factor and the least common multiple, as described in standard 6.NS.B.4. Early problems use lists and factor trees; later ones ask for shortcuts.

The final six problems are word problems about gift bags, schedules and garden plots. Write out the reasoning, then confirm each result by multiplying or dividing back.

Standards: 6.NS.B.4 · **Level:** Grade 6

Problem 1 Listing factors (easy)

Name every whole number that divides 28 with no remainder.

Problem 2 Smallest multiples (easy)

Write the six smallest positive multiples of 13.

Problem 3 Prime or composite (easy)

Decide whether each number is prime or composite: 51, 53, 57, 61.

Problem 4 Finishing a factor tree (easy)

Complete the factor tree and write 90 as a product of primes.



Start of a factor tree for 90.

Problem 5 GCF of 20 and 50 (easy)

Which is the greatest common factor of 20 and 50? List the factors of each.

Problem 6 GCF of 42 and 56 (medium)

Use prime factorizations to determine the GCF of 42 and 56.

Problem 7 LCM of 5 and 12 (medium)

Determine the LCM of 5 and 12 by listing multiples of the larger number until one fits the smaller.

Problem 8 Multiples of 10 and 4 (medium)

Mark the multiples of 10 up to 40 on a copy of the number line. What is the LCM of 4 and 10?



Multiples of 4 up to 40.

Problem 9 GCF of 64 and 80 (medium)

What is the largest number that divides both 64 and 80?

Problem 10 LCM of 9 and 12 (medium)

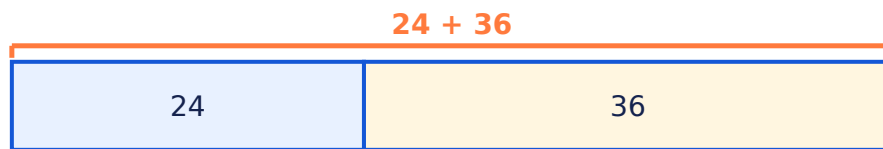
What is the smallest positive number divisible by both 9 and 12?

Problem 11 GCF of 45 and 100 (medium)

Determine the greatest common factor of 45 and 100 using any method.

Problem 12 Factoring $24 + 36$ (medium)

Use the GCF to write $24 + 36$ as a product of the GCF and a sum.



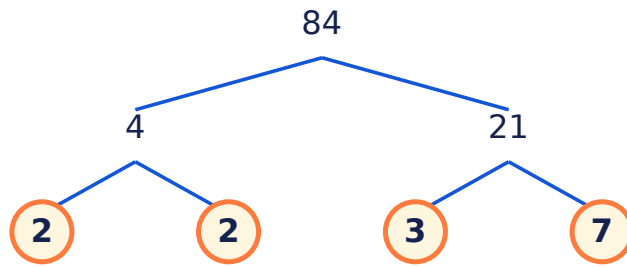
Two parts of a sum: 24 and 36.

Problem 13 Factoring $63 + 84$ (medium)

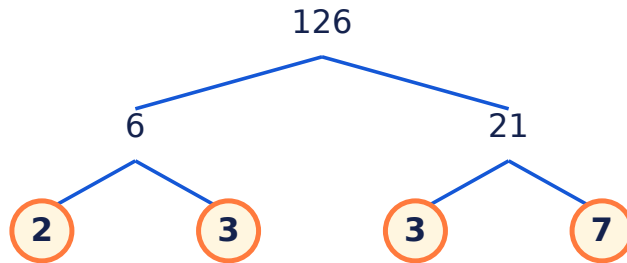
Rewrite $63 + 84$ as the GCF times a sum.

Problem 14 GCF of 84 and 126 (medium)

Use factor trees to find the GCF of 84 and 126.



Factor tree for 84.



Factor tree for 126.

Problem 15 Gift bags (medium)

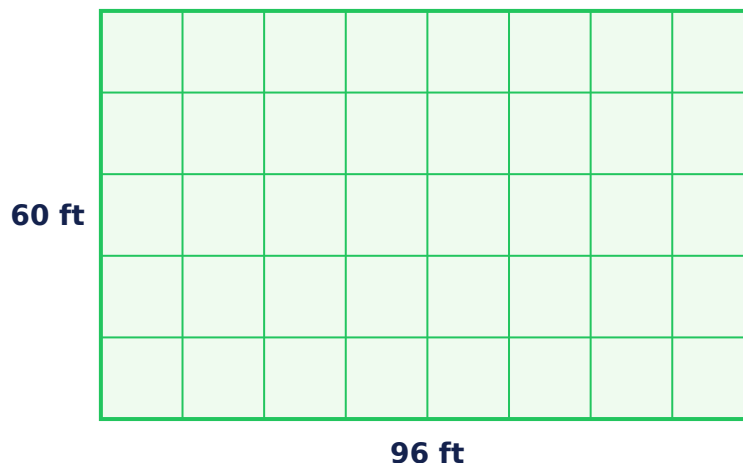
Dana has 56 granola bars and 84 juice boxes. She wants identical gift bags with nothing left over. What is the greatest number of bags she can make, and what goes in each bag?

Problem 16 Lighthouse flashes (medium)

One lighthouse flashes every 6 seconds and another every 8 seconds. They flash together at the start. How many times do they flash together in the next 2 minutes (not counting the start)?

Problem 17 Square garden plots (hard)

A rectangular garden is 96 feet by 60 feet. It will be cut into identical square plots with no waste. Find the largest possible side length and how many plots there are.



Garden bed, 96 ft by 60 ft (not drawn exactly to scale).

Problem 18 Two bus routes (hard)

Bus A leaves the station every 10 minutes and Bus B every 15 minutes. Both leave at 7:00 AM. List every time after 7:00 AM, up to and including 9:00 AM when they leave together.

Problem 19 School supply packs (hard)

A club buys marker packs of 8 and sticky-note packs of 12. It wants exactly the same number of markers as sticky notes. What is the least number of each item, and how many packs of each are needed?

Problem 20 Missing number (hard)

Two numbers have a GCF of 12 and an LCM of 72. One of the numbers is 24. Find the other number and check the answer.