L1 Factors and Multiples

Lesson 1 Factors and Multiples of Whole Numbers

Definitions:

Factor: a number that divides evenly into another number
ie. factors of 18 are 1, 2, 3, 6, 9, and 18

Multiples: of a number are determined by multiplying the number by any whole number other than 1(or by skip counting)
ie. some multiples of 6 are 6, 12, 18, 24…

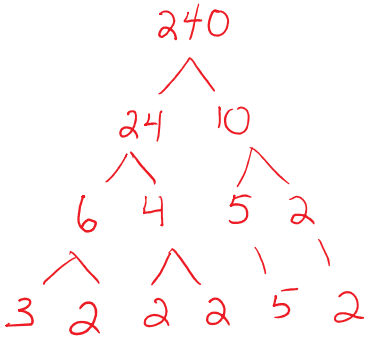
Greatest Common Factor (GCF): of two or more terms is the greatest factor the terms have in common.
ie. the greatest common factor of 28 and 42 is 14

Prime Factorization: of a natural number is the number written as a product of its prime factors.
ie. the prime factorization of 60 is $2^2 \cdot 3 \cdot 5$

Least Common Multiple (LCM): of two or more numbers is the least number that is divisible by each number.
ie. the least common multiple of 5 and 6 is 30

Example 1: Determining Prime Factors

Determine the prime factorization of 240.



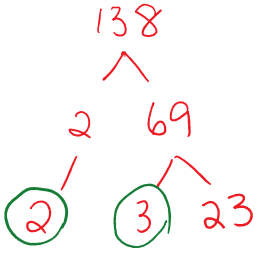
Prime factorization: $2^4 \cdot 3 \cdot 5$

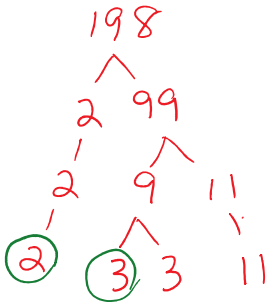
Try 192

$2^6 \cdot 3$

Example 2: Determining Greatest Common Factor (GCF)

Determine the GCF of 138 and 198





GCF $2 \cdot 3$

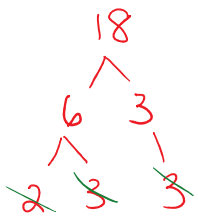
6

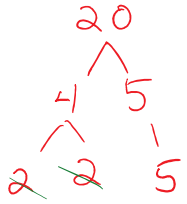
Try 81 and 54
GCF 27

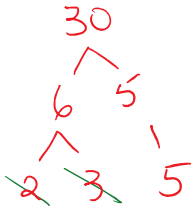
Try 65 and 104
GCF 13

Example 3: Determining the Least Common Multiple

Determine the least common multiple of 18, 20, and 30.







LCM $2^2 \cdot 3^2 \cdot 5$

180

Take each prime number the largest amount of times it occurs in one tree

18 and 30

Try 15 and 20
LCM 60

Assign
pg 140
5e, 6d
8b, d
10c, d

Example 4: Solving Problems Involving GCF and LCM

a) Determine the side length of the smallest square that could be tiled with rectangles that measure 16 cm by 40 cm. Assume the rectangles cannot be cut. Sketch the square and rectangles.

5e, 6d
8b, d
10c, d

Example 4: Solving Problems Involving GCF and LCM

a) Determine the side length of the smallest square that could be tiled with rectangles that measure 16 cm by 40 cm. Assume the rectangles cannot be cut. Sketch the square and rectangles.

b) Determine the side length of the largest square that could be used to tile a rectangle that measures 16 cm by 40 cm. Assume that the squares cannot be cut. Sketch the rectangle and squares.

L2 Perfect Squares and Cubes

Tuesday, September 6, 2022 6:57 PM

L2 Perfect Squares and Cubes

Lesson 2 Perfect Squares, Cubes, and their Roots

Recall:

Perfect Square: a number that can be expressed as the product of two equal factors
ie. 1, 4, 9, 16, 25, 36, 49, 64…

Square Root: a number which multiplied by itself, gives you the original number

Perfect Cube: a number that can be expressed as the product of three equal factors
ie. 1, 8, 27, 64, 125, 216…

Cube Root: a number which multiplied by itself three times produces the original number

Example 1: Determining the Square Root of a Whole Number

Determine the square root of 1600.

Example 2: Determining the Cube Root of a Whole Number

Determine the cube root of 1728.

Example 3: Using Roots to Solve Problems

A square has an area of 576 cm^2. Determine the side length of the square.