

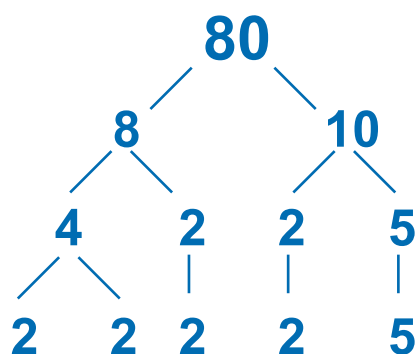
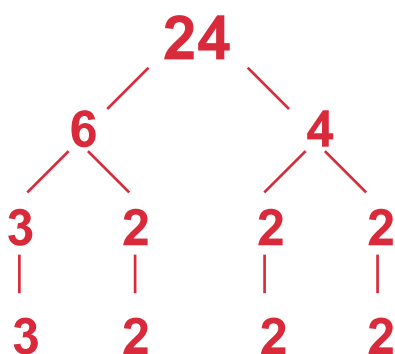
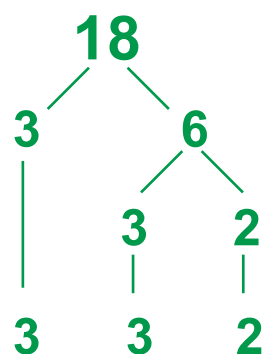
Finding the LEAST COMMON MULTIPLE using the Box approach

Problem: Find the Least Common Multiple for 18, 24, 80

Least Common Multiple: The LCM is the smallest number that all three numbers will divide into evenly.

Box Approach

Step 1 - Factor each number into prime numbers



Step 2 - Draw a box

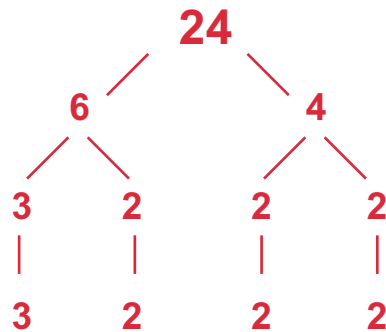
Step 3 - Put ALL factors for the first number (18) into the box. This is the same as putting "18" into the box.

$3 \cdot 3 \cdot 2$

18 ($3 \cdot 3 \cdot 2$) will divide evenly into the number in the box

Step 4 - In order for 24 to divide into the number in the box, the box must contain all the prime numbers for 24.

There must be one "3" and three "2"s. There are two "3"s and one "2" in the box. Two "2"s must be added for 24 to divide evenly in the number in the box.



$$3 \cdot 3 \cdot 2$$

Add the two additional "2"s that are needed.

$$3 \cdot 3 \cdot 2 \cdot 2 \cdot 2$$

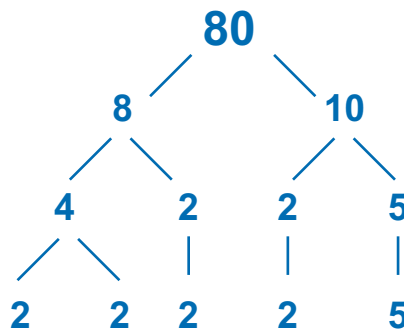
18 ($3 \cdot 3 \cdot 2$) will divide evenly into the number in the box

24 ($3 \cdot 2 \cdot 2 \cdot 2$) will divide evenly into the number in the box

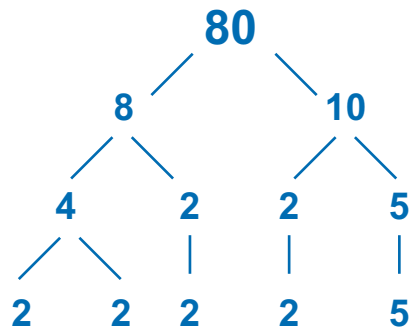
Step 5

In order to divide 80 into the number in the box there must be four "2"s and one "5". There are two "3"s and three "2"s in the box.

One more "2" and a "5" is missing.



$$3 \cdot 3 \cdot 2 \cdot 2 \cdot 2$$



Add the additional “2” and the “5” needed to be able to divide 80 evenly into the number in the box.

$$3 \cdot 3 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 5$$

18 ($3 \cdot 3 \cdot 2$) will divide evenly into the number in the box

24 ($3 \cdot 2 \cdot 2 \cdot 2$) will divide evenly into the number in the box

80 ($2 \cdot 2 \cdot 2 \cdot 2 \cdot 5$) will divide evenly into the number in the box

The number in the box is the **LEAST COMMON MULTIPLE**

Step 6

Find out what the Least Common Multiple is by multiplying all the factors together

$$3 \times 3 \times 2 \times 2 \times 2 \times 2 \times 5 = 720$$

720 is the LCM

Common mistake. Student puts the first factor of the first number (instead of all the factors of the first number) in the box.