

M8 - 6.0 - LCM GCF Notes

Lowest common multiple (LCM): the lowest number both numbers go into
 Greatest common factor (GCF): the biggest number that goes into two numbers

8 and 12?

Lowest Common Multiple (LCM):

8 and 12 = 24	8 : 8, 16, <u>24</u> , 32
	12 : 12, <u>24</u> , 36

$8 = 2^3$ Index Form
 $12 = 2^2 \times 3^1$ LCD = $2^3 \times 3^1 = 24$

LCM: All the numbers to the highest exponent

Greatest Common Factor (GCF):

8 and 12 = 4	8 : 1, 2, <u>4</u> , 8
	12 : 1, 2, 3, <u>4</u> , 6, 12

$8 = 2^3$ Index form:
 $12 = 2^2 \times 3^1$ GCF = $2^2 = 4$

GCF: Common numbers to the lowest exponent

72 and 60?

$72 = 2 \times 2 \times 2 \times 3 \times 3$
 $60 = 2 \times 2 \times 3 \times 5$

$LCM = 2 \times 2 \times 2 \times 3 \times 3 \times 5 = 360$
 $LCM = 2^3 \times 3^2 \times 5^1 = 360$

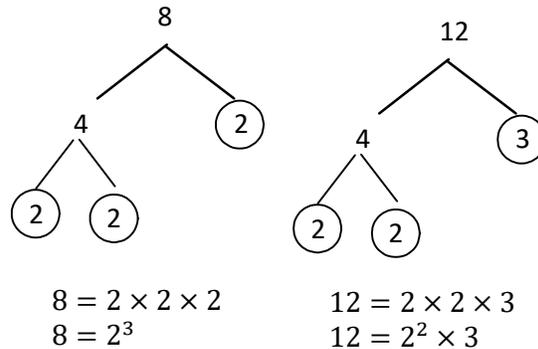
LCM: All the numbers to the highest exponent

$72 = 2 \times 2 \times 2 \times 3 \times 3$
 $60 = 2 \times 2 \times 3 \times 5$
 $GCF = 2 \times 2 \times 3 = 12$
 $GCF = 2^2 \times 3^1 = 12$

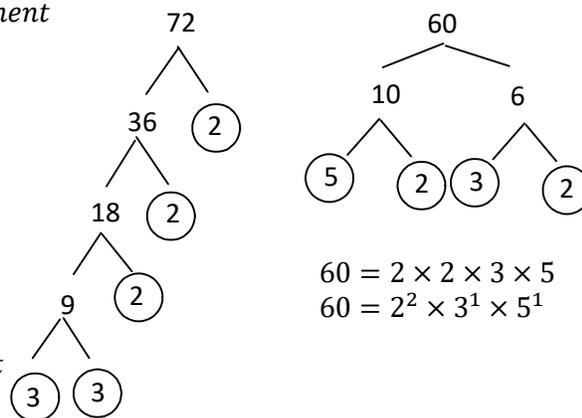
GCF: Common numbers to the lowest exponent

Prime Factorization Tree

8 and 12:



72 and 60:



$72 = 2 \times 2 \times 2 \times 3 \times 3$
 $72 = 2^3 \times 3^2$

OR

LCM:
72: 72, 144, 216, 288, <u>360</u>
60: 60, 120, 180, 240, 300, <u>360</u>
GCF:
72: 1, 2, 3, 4, 6, 8, 9, <u>12</u> , 18, 24, 36, 72
60: 1, 2, 3, 4, 5, 6, 10, <u>12</u> , 15, 20, 30, 60

2 goes into even numbers ending in 0, 2, 4, 6, or 8
 3 goes into numbers whose digits add to multiples of 3. 369? 3+6+9=18. 3 goes into 18! 3 goes into 369.
 5 goes into numbers ending in 5 or 0
 Or do Long Division or use calculator