

Name: _____

Date: _____

Learning Goal 3.2	Given a number or set of numbers, identify the prime factorization of each element and use it to find the GCF, LCM, perfect squares or cubes and/or factored form.
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Factor The building blocks of your term.
finite. - the numbers and variables that make up your term.

10
 ±1, ±2, ±5, ±10

Multiple The term multiplied by something.
infinite. - the term becomes a factor of the result

0, 10, 20, 30,
 -10, -20,

Person 1: a	Person 2: b	Person 3: c	Person 4: d
$a \times b$		$c \times d$	
Factors	Multiples	Factors	Multiples

Compare with your neighbouring group

Group A

$$a \times b = 7 \times 17 = 119$$

Group B

$$c \times d = 7 \times 11 = 77$$

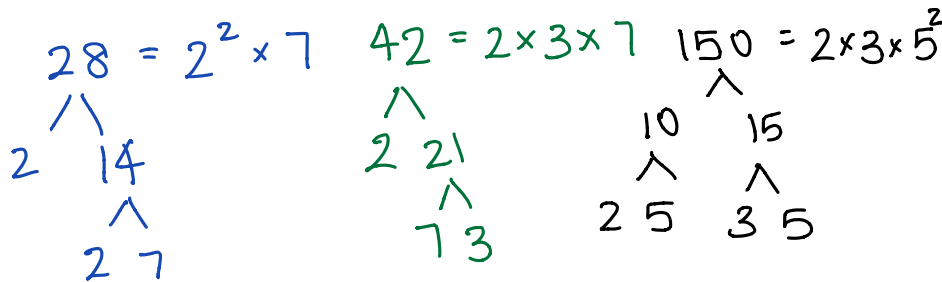
Common Factors	Common Multiples
± 1 ± 7	① $7 \times 11 \times 17$ ② $7 \times 11 \times 17 \times 2$
Biggest?	Smallest?
7	①

How do we know? Took the smallest number of factors possible from the prime factorization.

Example For the numbers 28, 42 and 150

a. Find the GCF.

2



$$2^1 \times \cancel{3^1} \times \cancel{5^2} \times \cancel{7^1}$$

smallest exponent

b. Find the LCM.

$$2^2 \times 3 \times 5^2 \times 7$$

$$2^2 \times 3^1 \times 5^2 \times 7^1$$

biggest exponent

$$\textcircled{1} \quad 2^5 \times 3^8 \times 5^{10} \times 7^3 \times 11^{12} \times 13 \times 17^2$$

$$\textcircled{2} \quad 2^8 \times 3^5 \times 5 \times 7^5 \times 11^{10} \times 13^6 \times 17^4$$

1440

1625