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.

Factor The building blocks of your term.
- the numbers and variables that make up your term.

finite.

10
±1, ±2, ±5, ±10

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

infinite.

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 x 17

= 119

Group B

$c \times d =$ 7 x 11

= 77

Common Factors	Common Multiples
±1 ±7	① 7 x 11 x 17 ② 7 x 11 x 17 x 2
Biggest?	Smallest?
7	①

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

Example For the numbers 28, 42 and150

a. Find the GCF.

$28 = 2^2 \times 7$ (2 × 14; 14 = 2 × 7)

$42 = 2 \times 3 \times 7$ (2 × 21; 21 = 7 × 3)

$150 = 2 \times 3 \times 5^2$ (10 × 15; 10 = 2 × 5; 15 = 3 × 5)

2

$2^1 \times 3^0 \times 5^0 \times 7^0$ 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

Assignment p.140 # 3(b, d), 4 – 6, 8, 9 (b, c), 10, 11 (b, c), 15 (a, b), 17, 19 Quiz Next Day!

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

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

1440 1625