5.4 Least Common Multiple

Multiple - a number that is a product of a specific number

3 - 3, 6, 9, 12, 15, 18
×1 ×2 ×3 ×4 ×5 ×6

6 - 6, 12, 18, 24, 36, 42, 48, 54, 60, 66, 72

8 - 8, 16, 24, 32, 40, 48, 56, 64, 72, 80

1st 3 multiples 24, 48, 72

Least Common Multiple 24
smallest multiple that both numbers have

Can the LCM be one of the numbers Yes

6 - 6, 12
12 - 12

Will the LCM ever be Less than one of the numbers
No

multiple ways to find the LCM

1. Multiple Lists
2. a product form
   b power form

6 = 2 × 3
8 = 2 × 2 × 2

Circle Pairs
Cross out one
multiply everything else

3 × 2 × 2 × 2 = 24

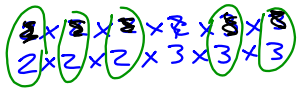
$6 = 2^1 \times 3^1$
$8 = 2^3$

GCF = Lowest exponent of all common factors
GCF(6, 8) = 1

LCM = Highest exponent of all factors
$2^3 \times 3^1 = 24$

$2^4 \times 3^2$
$2^3 \times 3^3$ LCM = $2^4 \times 3^3 = 432$

$2^5 \times 3 \times 7^2 \times 11$
$3^2 \times 5^3$ LCM = $2^5 \times 3^2 \times 5^3 \times 7^2 \times 11$



$\frac{2 \times 2 \times 2 \times 2}{} \times \frac{3 \times 3 \times 3}{}$
$2^9 \times 3^3 = 432$

p252-253
2 - 32 even