Math Notes

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1 GCD-LCM

1.1 GCD or HCF

Greatest Common Divisor/Highest Common Factor

GCD of 30 & 40

Divisors/factors

$30 : 1, 2, 3, \cdots, 15$

$40 : 1, 2, \cdots, 20$

Common factors: $1, 2, 5, \cdots$

Greatest Common Factor:

1.1.1 GCD of Fractions

$\frac{1}{2}$ & $\frac{1}{3}$

$\frac{1}{2} \rightarrow \frac{1}{2}, \frac{1}{4}, \cdots$

$\frac{1}{3} \rightarrow \frac{1}{3}, \frac{1}{6}, \cdots$

Which ones are common?

Which one is greatest?

1.2 Which fraction is greater?

$$\frac{1}{12}, \frac{1}{10}$$

Logically why?

From the same amount, taking 1 part out of 12 is less than taking 1 part out of 10 parts.

Each part is less if we divide into 12 parts than into 10 parts.

1.2.1 When Common Factors are Rare

Find GCD

$$\frac{1}{4}\&\frac{3}{11}; \frac{3}{5}\&\frac{6}{13}$$

1.2.2 Formula of GCD-LCM for fractions

$$GCD = \frac{\text{GCD of Numerators}}{\text{LCM of Denominators}}$$

$$LCM = \frac{\text{LCM of Numerators}}{\text{GCD of Denominators}}$$

1.2.3 Difference between Mulplier and Divisor

$$7 \times 3 = 21$$

$7 \rightarrow Multiplier$

$3 \rightarrow Multiplicand$

$21 \rightarrow Product$

3 and 7 are multipliers and multiplicands of each other, but not divisors.

$$\frac{20}{4} = 5$$

$20 \rightarrow Dividend$

$4 \rightarrow Divisor$

$5 \rightarrow Quotient$ (Remainder 0)

1.3 LCM

Lowest Common Multiple

Find LCM/GCD of

a. $\frac{1}{3}, \frac{1}{5}$

b. $\frac{1}{5}, \frac{1}{6}$

c. $\frac{1}{3}, \frac{1}{10}$

d. $\frac{1}{6}, \frac{1}{8}$

e. $\frac{1}{4}, \frac{2}{5}$

f. $\frac{1}{4}, \frac{3}{11}$

g. $0.2, 0.3$

h. $3, 1.25$