

Nov 18th, 2020

Numbers

Integers: positive or negative whole #'s
eg. -33, -17, -5, 0, 1, 3, 9, 21, ...

Whole #'s: only positive #'s 0, 1, 2, 3, 4, ...

Rational #'s: # that can be written as either a fraction or a decimal (or repeating decimal)

eg. $\frac{7}{8}$, $-\frac{4}{5}$, $\frac{1}{3} = 0.3333\dots$, $0.\bar{3}$, 0.25

Irrational #'s: #'s that cannot be written as a fraction (never ending)

eg. $\pi \Rightarrow 3.14159\dots$
 $\sqrt{2} \Rightarrow 1.41421\dots$

Prime Numbers: # with only 2 factors
1 & itself

eg. $\begin{array}{c} 2 \\ \wedge \\ 1, 2 \end{array}$, $\begin{array}{c} 3 \\ \wedge \\ 1, 3 \end{array}$, $\begin{array}{c} 5 \\ \wedge \\ 1, 5 \end{array}$, $\begin{array}{c} 7 \\ \wedge \\ 1, 7 \end{array}$, $\begin{array}{c} 11 \\ \wedge \\ 1, 11 \end{array}$, $\begin{array}{c} 13 \\ \wedge \\ 1, 13 \end{array}$

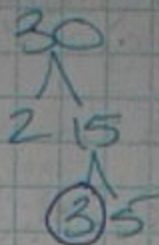
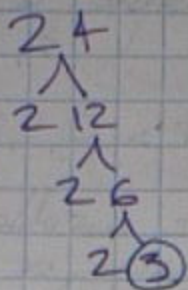
Composite Numbers: #'s with more than 2 factors (i.e. can be made by combining other #'s)

example: $\begin{array}{c} 24 \\ \wedge \\ 2, 12 \\ \wedge \\ 2, 6 \\ \wedge \\ 2, 3 \end{array}$

factors of 24 are
2, 2, 2, 3

Greatest Common Factors

→ largest factor between
at least 2 #'s



Operations

Addition (+) → sum Σ

Subtraction (-) → difference

Multiplication (\times , \cdot , $(3)(4)$, $5x$) → Product

Division (\div , $\frac{3}{4}$, $3/4$, $7 \overline{)121}$) → Quotient

Square roots ($\sqrt{\quad}$) → a # which
produces a
specific quantity
when multiplied
by itself

Exponents / Powers (3^4) $\sqrt{9} = 3 // 3^2 = 9$

↳ repeated Multiplication

$$\text{eg. } 3^4 = \underbrace{3 \times 3 \times 3 \times 3}_{4 \text{ times}}$$

\square^2 = Squaring (Area)

\square^3 = Cubed (Volume)

Inequalities

- Equals too ($=$)
- Not Equal to (\neq)
- Greater than ($>$)
- Greater than or Equal to (\geq)
- Less than ($<$)
- Less than or Equal to (\leq)

Order of operations

Bracket

Exponents

Division

Multiplication

Additions

Subtraction

} interchangeable

} interchangeable

Solve left to Right!