N-Formula's

N0

All answers that can be expressed as the correct answer will be accepted.

N1

N0, and the following rules:

- Change all instances of $\cdot$, $\times$ into $*$.

- change ax to $a*x$, also change $a(...)$ to $a*(...)$, aswell as $a\sqrt{...}$ to $a*\sqrt{...}$, also $(...)(...)$ becomes $(...)*(...)$.

- Ignore all spaces and all periods at the end of the expressions.

- When multiple answers for x are given (such as $x = 3 \lor x = 4$), take those values $x_1, x_2 \ldots, x_n$ and create the polynomial $(x - x_1) * (x - x_2) * (x - x_n)$.

N2

N0, N1, and the following rules:

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$$3 * b + 4 * a + 6 * b + 2 * c \implies 4 * a + 6 * b + 3 * b + 2 * c$$

  For each sum the letters that are in the sum will ONLY be sorted in alphabetical order, not added in this section.

$$z * 4 * y * v * x * w \implies 4 * v * w * x * y * z$$

  All products of letters and numbers will be ordered by having the product of the numbers first and then the rest of the letters in the product in alphabetical order.

- If $a, b \in \mathbb{Z}$ and $\gcd(a, b) = 1$
$$\frac{a * x}{b * y} \implies \frac{a}{b} * \frac{x}{y}$$

- If $m = 1$ or $n = 1$:
$$\frac{m * x}{n * y} \implies \frac{m}{n} * \frac{x}{y}$$
  transform: $m \implies \frac{p}{q}$ with $p, q \in \mathbb{Z}$ transform: $n \implies \frac{r}{s}$ with $r, s \in \mathbb{Z}$

$$\frac{m}{n} * \frac{x}{y} \implies \frac{\frac{p}{q}}{\frac{r}{s}} * \frac{x}{y} \implies \frac{p * s}{q * r} * \frac{x}{y}$$

  transform: $p * s \implies \frac{p*s}{\gcd(p*s, q*r)} \implies a$
  transform: $q * r \implies \frac{q*r}{\gcd(p*s, q*r)} \implies b$

  Final form:
$$\frac{p * s}{q * r} * \frac{x}{y} \implies \frac{\frac{p*s}{\gcd(p*s, q*r)}}{\frac{q*r}{\gcd(p*s, q*r)}} * \frac{x}{y} \implies \frac{a}{b} * \frac{x}{y}$$

-
$$p * x \implies \frac{a}{b} * x$$

  With $a, b \in \mathbb{Z}$ and $gcd(a, b) = 1$

-
$$\frac{y^m}{x^n} \implies y^m * x^{-n}$$

N3

N0, N1, N2, and the following rules:

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$$\left(\frac{x}{y}\right)^n \implies x^n * y^{-n}$$

- If $a, b \in \mathbb{R}$:
$$\frac{a * x}{b * y} \implies \frac{a}{b} * \frac{x}{y}$$

  transformation: $\frac{a}{b} \implies P$, where P is the decimal representation of $\frac{a}{b}$ rounded to 3 decimals.

$$\frac{a}{b} * \frac{x}{y} \implies P * x * y^{-1}$$

N4

N0, N1, N2, N3, and the following rules:

- For all fractions of the form $\frac{a}{b}$ with $a, b \in \mathbb{R}$
$$\left(\frac{a * x}{b * y}\right)^n \implies \frac{a^n}{b^n} * x^n * y^{-n}$$

  transformation: $\frac{a^n}{b^n} \implies P$, where P is the decimal representation of $\frac{a^n}{b^n}$ rounded to 3 decimals.

$$\frac{a}{b} * \frac{x}{y} \implies P * \frac{x}{y}$$

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$$\text{if } a = b^2 \text{ for certain } b \in \mathbb{Z}: \sqrt{a * x} \implies b * \sqrt{x}$$

$$\sqrt{x^{2*n}} \implies x^n$$

-
$$a * x^n + b * x^n \implies p * x^n$$

  Let p be the sum of a and b.

-
$$a * x^n * b * x^m \implies q * x^r$$

  Let q be the product of a and b. Let r be the sum of n and m.

Examples

$N(\frac{3xp}{5y};2) \implies \frac{3*x*p}{5*y} \implies \frac{3*p*x}{5*y} \implies \frac{3}{5} * \frac{p*x}{y} \implies \frac{3}{5} * p * x * y^{-1}$

$N(\frac{6xp}{10y};3) \implies \frac{6*x*p}{10*y} \implies \frac{6*p*x}{10*y} \implies \frac{6}{10} * \frac{p*x}{y} \implies 0,600 * p * x * y^{-1}$

$N(\frac{6xp}{10y};2) \implies \frac{6*x*p}{10*y} \implies \frac{6*p*x}{10*y}$

$N(0,6 \times \frac{p \cdot x}{y};2) \implies 0,6 * \frac{p*x}{y} \implies \frac{3}{5} * \frac{p*x}{y} \implies \frac{3}{5} * p * x * y^{-1}$

$N(0,6 \times \frac{px}{y};2) \implies 0,6 * \frac{p*x}{y} \implies \frac{3}{5}\frac{p*x}{y} \implies \frac{3}{5} * p * x * y^{-1} \implies 0,600 * p * x * y^{-1}$