Tips for mathematical writing

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write the formulation as part of article

should not be written as $x_{ijk} = $ the number ...

remember to define index boundary

(b) Let x_{ijk} be the number of million barrels of oil shipped from refinery i to distribution point j per year if the scenario k is realized, $i = 1, ..., N$, $j = 1, ..., M$, $k = 1, ..., S$. Let y_i be the number of million barrels of refining capacity that is added for refinery i, $i = 1, ..., N$. The LP formulation for this problem is

all mathematical notations should be italic

$$\max \quad \sum_{i=1}^{N} \left(T \sum_{k=1}^{S} Q_k \sum_{j=1}^{M} P_{ij} x_{ijk} - TC_i y_i \right)$$

\forall

should not be italic

$$\text{s.t.} \quad \sum_{j=1}^{M} x_{ijk} \leq K_i + y_i \quad \forall i = 1, ..., N, \ k = 1, ..., S$$

should not be written as "<="

$$\sum_{i=1}^{N} x_{ijk} \leq D_{kj} \quad \forall j = 1, ..., M, \ k = 1, ..., S$$

write the sign constraints one by one if possible

$$x_{ijk} \geq 0 \quad \forall i = 1, ..., N, \ j = 1, ..., M, \ k = 1, ..., S$$
$$y_i \geq 0 \quad \forall i = 1, ..., N.$$

with '.' at the end of sentence if there should be one

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$\forall i \in I = [1, N]$ *i* is in an interval *I*; wrong!

$\forall i \in I = \{1, ..., N\}$ *i* is an element of a set *I*; right!

$\forall i \in I = \{1, ..., N\}$

$\forall i \in I = \{1, \ldots, N\}$ ... and \ldot are both okay

$f_1 \leq f_2 \leq \cdots \leq f_n$

but in this case you should use \cdots

$\sum_{i=0}^{N} i$ $\sum_{i \in I} i$ both expressions are okay, but make sure your *i* or *N* or *I* are well-defined

please specify how to choose a value for *M*

$(1 - x) \leq My$ where M is a large number

$(1 - x) \leq M \times y$

it is not suggested to put too many \times in equations, especially if removing them does not lead to misunderstanding