

How to Punctuate Display Equations

1 If the equation ends the sentence

The general classification model seeks to minimize

$$\sum_{i=1}^m e(\psi_i).$$

Adapted from [1].

2 If the equation follows a complete sentence

The problem is then to determine if the following system (denoted (VC) for vertex color) has a feasible solution:

$$x_{ik} + x_{jk} \leq 1 \quad \forall (i, j) \in E, \quad k = 1, \dots, K$$

$$\sum_k x_{ik} = 1 \quad \forall i \in V$$

$$x_{ik} \in \{0, 1\} \quad \forall i \in V, \quad k = 1, \dots, K.$$

[2]

3 If the equation ends an introductory phrase/clause

By defining

$$\psi_i = y_i(a_1x_{i1} + a_2x_{i2} + \dots + a_nx_{in} + \alpha)$$

and observing the fact that a correct classification takes on the property

$$\psi_i > 0,$$

we can...

Adapted from [1].



If nonrestrictive* info follows

It is updated recursively following the update rule

$$p(t_k, r_k) = \frac{1}{C} L_k(s_k) \bar{p}(t_{k-1}, s_{k-1}),$$

where \bar{p} is the prior probability density...

Adapted from [3].

*For more info on comma use and nonrestrictive info, visit the GWC page on [Commas, nonessential elements](#).



If before a FANBOYS** that connects two independent clauses

We can define an error function by

$$e(\psi_i) = \begin{cases} 1 & \text{if } \psi_i \leq 0 \text{ and} \\ 0 & \text{otherwise,} \end{cases}$$

so the general classification model seeks to minimize

$$\sum_{i=1}^m e(\psi_i).$$

Adapted from [1].

**FANBOYS = for, and, nor, but, or yet, so

For more info on comma use and FANBOYS, visit the GWC page on [Commas, FANBOYS](#).



Sources:

[1] M. T. Miller, "Piecewise-affine classifiers in support vector machines," M.S. thesis, Dept of Op. Res. and Appl. Math., NPS, Monterey, CA, USA, 2019. [Online] Available: <http://hdl.handle.net/10945/62730>

[2] A. Mehrotra and M. A. Trick, "A column generation approach for graph coloring," *INFORMS Journal on Computing*, vol. 8, no. 4, pp. 344-354, Nov. 1996. [Online]. doi: 10.1287/ijoc.8.4.344

[3] M. Heaton, "Randomized path optimization for the mitigated counter-detection of UAVs," M.S. thesis, Dept of Appl. Math., NPS, Monterey, CA, USA, 2017. [Online]. Available: <http://hdl.handle.net/10945/55619>

For more information see the [GWC resources pages](#) or work with a writing coach!

