Mathematical Writing
Chapter 1

Style

➢ Give priority to clarity over fancy language. Avoid long and involved sentences; break long sentences into shorter ones.

Bad: We note the fact that the polynomial $2x^2 - x - 1$ has the coefficient of the x^2 term positive.

Good: The leading coefficient of the polynomial $2x^2 - x - 1$ is positive.

Style

Bad: The inverse of the matrix A requires the determinant of A to be non-zero in order to exist, but the matrix A has zero determinant, and so its inverse does not exist.

Good: The matrix A has zero determinant, hence it has no inverse.

Style

➢ Place important words in a prominent position within the sentence. Suppose you are introducing the logarithm:

  Bad: An important example of a transcendental function is the logarithm.

  Good: The logarithm is an important example of a transcendental function.

  Good: Let us now define a key transcendental function: the logarithm.

  Bad: A commonly used method to check the orthogonality of two vectors is to verify that their scalar product is zero.

  Good: If the scalar product of two vectors is zero, then the vectors are orthogonal.

Style

➢ Prefer the active to the passive voice.

    Bad: The convergence of the above series will now be established.

    Good: We establish the convergence of the above series.

➢ Vary the choice of words to avoid repetition and monotony.

    Bad: The function defined above is a function of both x and y.

    Good: The function defined above depends on both x and y.

➢ Do not use unfamiliar words unless you know their exact meaning.

    Bad: A simplistic argument shows that our polynomial is irreducible.

    Good: A simple argument shows that our polynomial is irreducible