Preface to a Compendium of Mathematical Superheroism

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In the beginning was mathematics. Mathematics may precede us, but is revealed to us by the great. As long as there has been mathematics with us, there have been the great. Greatness produces mathematics; mathematics produces greatness; mathematics is greatness. And the mathematical superhero personifies the zenith of this greatness.

Who are they? Where do they come from? What is their purpose? What do they do? Why? And why do they all have such bad fashion sense?

They were not called upon. They were not crowned in glory. They were not elected, selected, or appointed to the job. They were not born with a silver spoon; even though some were born through the fourth dimension. Some were discreet; but others were continuous. Some were straightlaced; but others are a little more knotty.

For the mathematical superhero is a complex character.[1] The mathematical superhero is a function of many variables.[2] The mathematical superhero is just one element in a free associative group.[3] The mathematical superhero knows no boundaries[4] — something of a closed manifold.[5] The mathematical superhero, in the end, though there are variations,[6] solves the problem, and with minimal energy[7] — something of a geodesic.[8] He or she may be rather twisted,[9] may be rather tangled,[10] but transforms well under change of variables[11] — something of a tensor, really.[12] The mathematical superhero comes in many varieties[13] —

[1] *Complex*? Get it? 5 points for appreciating the mathematical pun. *Character*? Get it? 30 points for this one.
[2] 10 points.
[3] 15 points.
[4] 10 points.
[5] 40 points.
[6] 20 points.
[7] 20 points.
[8] Bonus 50 points for your knowledge of differential geometry!
[9] 10 points.
[10] 30 points.
[11] 10 points.
[12] 50 points.
[13] 30 points.

is often stalked[14] — but is always enough to foil any evil scheme[15] from any point in the spectrum,[16] from the most generic[17] to the most maximal.[18]

No, greatness was thrust upon them. Their geekiness knew no bounds, and they revelled in things other than sport. Their intellects overtook them, and could only express itself in strange and bizarre outgrowths: spiky-haired protrusions, strange capes and outrageous socks and sandals. And in matters linguistic, a tendency — or rather, an irresistible compulsion — to pun relentlessly and atrociously on mathematical terms, well beyond any reasonable limit.[19] They could not help themselves; they could not avoid it; that would be an infinite descent.[20] Powered with coffee — the product of the cup[21] — more bad mathematical puns have been made than was ever thought possible, and mathematical harmony has been restored to the universe time and time again.

For not everyone can be a mathematical superhero. Not everyone can make terrible mathematical puns as consistently and as appallingly. Not everyone can save the world from a maniacal physicist/economist/vice-chancellor/(insert your least favourite non-mathematical person here) with an evil and suitably twisted and ridiculous plan to take over the world — or, much the same thing, the mathematics department. Not everyone can be so utterly inept at every facet of human endeavour other than world-saving heroism. Not everyone refers to a donut as 'genus-1 nutrition'. And not everyone is so comfortable with Cauchy's formulation of continuity as to be named after its essential variables. Yes, the world needs mathemagicians to look up to. Yes, even if they arise from the demented vision of a twisted author in the rather obscure genre of mathematical comics.

But we should not go too far. We should not put these heroes on a pedestal. For in a sense, the mathematical superhero is everywoman and everyman. Is there not really, deep in our hearts, a mathematical superhero in all of us? We need to unlock our potential, remove our cutoff functions, and drink too much coffee. We must disgorge ourselves of all selfishness, avarice, and fashion sense. We must rail against injustice, iniquity, and inelegance. We must take action, when necessary, and apply our knowledge to the real world, sometimes, when we really have to, and physicists or engineers will not do it for us.

In this humble collection, you will see some of the finest examples of mathematical superheroes ever produced. You will be taken to heights of superhero magnificence greater than N, for any given $N > 0$. So let us proceed.

— Daniel Mathews, 8/10/05, Stanford, USA

[14] 40 points.
[15] 30 points — bonus 50 points if you know the definition of a scheme!
[16] Minus 200 points for knowing way too much algebraic geometry!
[17] Minus 500 points more, this is getting ridiculous.
[18] Minus 50 points.
[19] Oh yes, beyond any reasonable limit: 20 points.
[20] 20 points.
[21] 50 points. (No, not for 'product', but for 'cup product'.)

Results

- 400+: You are truly one of the great. You have *more brains than the basket behind a guillotine*, and *more sexual allure than a hyperbolic attractor*.
- 300–400: You are almost there. Try wearing socks and sandals more often. You might even like to get yourself a cape or a *super*visor.
- 200–300: You are well on your way. You should read more comics about the exploits of mathematical superheroes. Lucky, then, that you are reading this. But please refrain from battling any but the most minor villains. You will need yet to obtain *more power than a quintic (5)*.
- 100–200: Above average. You have potential, but you have much to learn in our ways. Yes, there is a mathematical superhero inside you. But you will need to obtain a *transcendental extension in all fields* first.
- 50–100: You have yet to make an impression in the world of mathematical superheroism, but yet you can succeed. You have made a start, but there is a long way to go. Your first task is to become *more caffeinated than a convoy of long-haul truck drivers* and *more poised than a stable 2-cycle*.
- 0–50: Perhaps you would be better leaving the crazed physicists and economists and vice-chancellors to others.
- Less than 0: You know way too much algebraic geometry. *Shame on you!*