

A Proposal Concerning Fellows

Mathematics is egalitarian, open to all with the requisite talent and training, although access to that training may be hampered by accidents of birth and economic circumstance, impediments that society must work to overcome. On the other hand, we mathematicians crown ourselves with a diversity of prizes, however nonegalitarian that may be, or capriciously (as some claim) they may be awarded. About that there is generally no complaint. Now, however, the disquiet caused by the creation of a class of Fellows of the Society is causing some offered this honorific to decline it, and others even to find in it cause for renouncing membership in our Society. The distinction is that omission from an ultra-select class does not diminish our feeling of self-worth but that those long serving the mathematical community may feel their service derogated by exclusion from a much broader group. I suggest that, as with other professional and scientific societies, we honor as Fellows those who have reached some combination of years of membership and age. Those who for years have faithfully toiled in the vineyards should also receive their due reward.

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On Scissor Congruence

The article “WHAT IS... a Scissors Congruence” in the October 2012 *Notices* reviewed work arising from Hilbert’s problem on the decomposition of two convex polyhedra into pairwise congruent subpolyhedra. I wish to call attention to work on more general decompositions of convex bodies.

The term “scissor congruent” was introduced by Dubins et al. [1] to describe a pair of convex planar bodies A, B having cell decompositions such that there is a bijection between the two-cells of A and those of B with

corresponding two-cells congruent through rigid motions.

The main result in [1] is that A and B are scissor congruent iff they have the same area and their boundaries have partitions $\partial A = I_1 \cup \dots \cup I_m$, $\partial B = J_1 \cup \dots \cup J_m$ with I_k and J_k congruent arcs. It follows that a square is not scissor congruent to any strictly convex body, and if two ellipses are scissor congruent, then they are congruent.

Gold [2] investigated scissor congruence of unbounded convex sets. Gardner [3] looked at more refined decomposability questions. Richter [4], [5] considered scissor congruence based on affine motions.

References

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- [4] C. RICHTER, Affine congruence by dissection of discs—appropriate groups and optimal dissections, *J. Geom.* **84** (2005), 117–132.
- [5] ———, Squaring the circle via affine congruence by dissection with smooth pieces, *Beiträge Algebra Geom.* **48** (2007), no. 2, 423–434.

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Ethics in Mathematics

The leading principle of the professional ethics in mathematics is proving and disproving of claims. Negative claims must be proven as well as positive ones.

Rejection of papers by referees must be also proven. Otherwise, authors can be unprotected against subjective decisions, which can be serious obstacles for the progress of science.

Editors can reject papers if and only if those papers do not preserve the packages of rules for authors and/or they are out of the scope of the respective journals.

There have to be reasonable periods of time for referees’ refereeing, and if the referees violate those periods they have to explain why to editors.

There should not be any a priori advantage of editors and referees over authors; unfortunately, editors as a rule are on the side of referees and reject papers by recommendation of the referees without authors’ responses (and even without a proof that the authors have serious mistakes).

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Refereeing Nirvana

Brian Osserman’s refereeing proposal (*Notices*, November 2012) reminds me of the running joke about “grunge frosh” during my undergraduate days at Caltech. An older student would be frustrated by a long and tedious calculation, so a typical facetious comment would be to farm out such annoying calculations to an unsuspecting frosh because we older students couldn’t be bothered to do them. Except I don’t think that Brian is joking....

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