

Think It Over



This section of Resonance is meant to raise thought-provoking, interesting, or just plain brain-teasing questions every month, and discuss answers a few months later. Readers are welcome to send in suggestions for such questions, solutions to questions already posed, comments on the solutions discussed in the journal, etc. to Resonance, Indian Academy of Sciences, Bangalore 560 080, with "Think It Over" written on the cover or card to help us sort the correspondence. Due to limitations of space, it may not be possible to use all the material received. However, the coordinators of this section (currently R Nityananda and C S Yogananda) will try and select items which best illustrate various ideas and concepts, for inclusion in this section.

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Integral Distances : A Problem from Paul Erdős

As a sampler of Erdős' early work in combinatorial geometry, we offer a problem proposed by Paul Erdős and N H Anning in 1945 in a paper titled 'Integral Distances'. The problem is the following.

Show that (a) for any integer $n > 2$ one can find n distinct points in a plane, not all on a line, such that the distances between them are all integers; (b) it is impossible to find infinitely many points, not all on a line, with this property.

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A Burning Question

You are given two non-identical, nonuniform laces. Each takes one hour to burn. Being non-uniform, equal lengths don't burn in equal times. How will you burn them to determine a time interval of 45 minutes ?

A more difficult variation on this:

You now have only one such lace. How will you burn it to determine only 15 minutes ?

