percentage of the cohort than the O level.

We seem to have arrived at the present situation because it was thought necessary to teach everybody mathematics, and that everybody was capable of learning mathematics. I would question both: certainly there is a requirement for most people to have a facility with number, but how many actually need mathematics beyond arithmetic and very simple algebra? Perhaps we should take a leaf from the classicists' book and provide a 'Classical Civilisation' course – call it 'Mathematics for Living' – which is designed for all the cohort, and a 'Latin' course – call it 'Mathematics' – which can then have a rigorous approach to the subject. It could cover the material in the present mathematics and additional mathematics syllabi, and provide a sound footing for the A level course. I already hear cries about disadvantaging the less able, but the present system does the opposite: it does nothing to challenge the more able, and provides a poor foundation for their further studies.

Reference

1. Tony Gardiner, The Art of Knowing, *Math. Gaz.* **82**, 495 (November 1998), pp. 354-372.

Yours sincerely,

PETER MILDENHALL

Bury Grammar School, Tenterden Street Bury BL9 0HN

DEAR EDITOR,

Let $\tau(n)$ be the number of positive integers not exceeding n that are expressible as the sum of two squares. For small values of n, the ratio $\rho(n) = \tau(n)/n$ is around 0.35. For example, $\rho(50) = 0.36$, $\rho(100) = 0.35$, $\rho(150) \approx 0.37$ and $\rho(200) = 0.36$. Does this relation continue to hold for larger values of n? Perhaps a reader knows of an asymptotic formula or could test the result further using a computer.

Yours sincerely,

Canon D. B. EPERSON

Hillrise, 12 Tennyson Road, Worthing BN11 4BY

DEAR EDITOR,

J. R. Goggins has pointed out a mistake (my typing error) in the article on Napoleon triangles [2]. Both entries $30 - \theta$ in family A on page 416 should be $30 - 2\theta$, the sextet being (θ, $30 - 2\theta$, $90 + \theta$; 2θ, $30 - 2\theta$, 30).

Using an improved search program, my computer has found another adventitious set – (15, 30, 51; 24, 27, 33) – bringing the total to 39.

Adventitious angles occur in other contexts. Some years ago C. E. Tripp investigated quadrangles with integral angles [4]. These are related to the sextets by transformations such as that illustrated in Figure 9 of my article. Also J. F. Rigby has drawn my attention to a paper discussing the angles associated with triples of concurrent diagonals of regular polygons [3]. These are related both to Tripp's and my adventitious angles. Rigby's results demonstrate the existence of rational adventitious sextets that are not in any

https://doi.org/10.1017/S0025557200209376 Published online by Cambridge University Press

of the families: two examples are ($12\frac{6}{7}$, $23\frac{4}{7}$, $49\frac{2}{7}$; 15, $17\frac{1}{7}$, $62\frac{1}{7}$) and (9, $34\frac{1}{2}$, $43\frac{1}{2}$; 12, $19\frac{1}{2}$, $61\frac{1}{2}$). The paper also implies that any adventitious sextet comprises multiples of one of $\frac{6}{7}$, $\frac{3}{2}$, 2, $\frac{15}{7}$, 3, $\frac{30}{7}$ or 6. It follows that the number of distinct sextets is finite. As well as the 39 integral sets my computer has found 26 others, 65 in all, agreeing with the number given by G. Bol [1] in a solution to a prize question.

References

1. G. Bol, Beantwoording van prijsvraag no. 17, *Nieuw Archief voor Wiskunde* **18** (1936) pp. 14-66.
2. Michael Fox, Napoleon triangles and adventitious angles, *Math. Gaz.* **82** (November 1998) pp. 413-422.
3. J. F. Rigby, Multiple intersections of diagonals of regular polygons, and related topics, *Geometriae Dedicata* **9** (1980) pp. 207-238.
4. C. E. Tripp, Adventitious angles, *Math. Gaz.* **59** (1975) pp. 98-106.

Yours sincerely,

MICHAEL FOX

2 Leam Road, Leamington Spa, Warwickshire CV31 3PA

Mathematically promising pupils — call for information

Provision for mathematically promising (or 'talented' or 'gifted') young people in the UK is multi-faceted and wide-ranging, yet it is broadly unknown. Groups organising provision of this kind often work in isolation from one another, many teachers with 'bright' children do not know where to get help or support, and parents have to fight long and determined battles to find appropriate stimulation and encouragement.

A small group of some of those active in this field has set itself a number of tasks, viz:

* to survey the available provision for such young people in the UK
* to disseminate its findings widely
* to identify priorities to sustain and develop activities of this kind
* to support and encourage further developments.

If you would like to be involved in the work of this group, or if you know of any regular activity aimed at encouraging and stimulating mathematically promising pupils, please inform

Bill Richardson, Kintail, Longmorn, Elgin, Moray IV30 8RJ

(E-mail: wpr3@tutor.open.ac.uk)

as soon as possible. Information about existing activities should, if possible, include: (a) contact name and address; (b) brief description of the activity (possibly including sample materials); (c) other relevant information such as the targeted age group, catchment area, selection process, etc.

Please note that the group is already informed on activities associated with the Royal Institution Mathematics Masterclasses, the NRICH Project and the UK Mathematics Trust.