57	105	193	355
48	88	162	298
40	74	136	250
34	62	114	210	(= $2 \times$ [17, 31, 57, 105])

– the sequence terminating after 16 steps.

DEAR EDITOR,

Mathematical Pie (No. 146, I think) gave a fascinating result which I had not previously come across: if squares are drawn on the sides of any quadrilateral, the joins of the centres of opposite squares are equal and perpendicular.

I can prove this by either of two techniques (complex numbers and vector products) by which half-sides of the quadrilateral may be turned through a right-angle. (Incidentally, these methods make it clear that the squares may be drawn either all outwardly or all inwardly.) But I feel that such a seemingly 'elementary' result should admit of an 'elementary' proof and such I have failed to find. Perhaps a *Gazette* reader can supply a proof that Euclid would have understood.

It may be of interest to note that a pretty result emerges by regarding a triangle as, in three different ways, a quadrilateral with a zero side. One of my grandchildren has pointed out to me that a line segment may also be regarded as a degenerate quadrilateral: the result still holds.

Yours sincerely,

ERIC BARTON

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DEAR EDITOR,

The article by M. N. Brearley et al, in the November 1998 *Gazette* pp. 389-404, reminds me of some work done at Cambridge in the 1930s, which should not perhaps go unrecorded. Professor Sir Charles Inglis, then Head of the Department of Engineering, had the idea of multiple-phase rowing in order to even out the acceleration of a racing shell. To avoid conflict of the blades, he developed the 'syncopated six', with three phases, and trained a crew to use it in a specially fitted boat.

A race was then arranged between an eight and his six. Though I was not present, I understand that the six was substantially faster and pulled away from the eight. I believe the Cambridge authorities then banned this form of rowing in races.

Sir Charles was still Head of Department when I was up as an undergraduate, and I heard the story from him myself. As far as I know, nothing was published about this work. It would be a pity for it to be forgotten.

Yours sincerely,

ROBERT MACMILLAN

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