The generalist: Judith Staines, Devon

Enigmas & puzzles

George the giant

Barry R Clarke

George the giant wants to plant a circular lawn but has no measuring equipment. So he decides to walk 14 paces in a straight line from A to B, and then a whole number of paces in a straight line from B to C (see diagram). His route A–B passes through the circle centre, and B–C is a tangent to the circle. Points A and C also lie on the circle circumference. Each of George’s paces is seven metres, and the lawn radius is a prime number of metres. What is the diameter of the lawn in metres?

Last month’s solution

The number is 594.

Let the digits be a, b and c. The number A can then be written as 100a + 10b + c. The possible juxtapositions for B are a with b, a with c, or b with c. The results of B - A are then 90(a - b), 90(a - c), or 9(b - c), respectively. A two-digit number containing two different digits is only possible using the last choice because for the first two, the only possibilities, a - b = 1 and a - c = 1, are invalid. For the third choice, the possible solutions are 831 or 106 for b - c = 2, 702 or 574 for b - c = 3, 673 or 362 for b - c = 4, or 594 for b - c = 5, where the result of subtraction is C = 44. Only the last case where the result of subtraction is C = 44 allows the remaining digit (9) to equal the sum of the other two.

How to enter

The generalist prize

The winner receives a copy of Countrymen: The Untold Story of How Denmark’s Jews Escaped the Nazis, by journalist and former diplomat Bo Lidegaard (Atlantic Books, £22, hardback). Lidegaard vividly describes how 95 per cent of Denmark’s Jewish population was smuggled out of the Nazi-occupied country during an organised two-week campaign by fellow citizens, saving them from imminent deportation to concentration camps. “Magnificent... An extraordinary story”—Michael Ignatoff

Enigmas & puzzles prize

One winner receives a copy of The Quantum Age: How the Physics of the Very Small Has Transformed Our Lives, by Brian Clegg (Icon Books, £14.99). Clegg explains how we are living through a revolution as we exploit quantum behaviour for everything from DVDs to MRI scanners. In the not too distant future, he suggests, the quantum revolution may even make Star Trek-like transporters a reality. The winner also receives a copy of The Sky at Night: How to Read the Solar System by Chris North and Paul Abel (BBC Books, £29.99).

Rules

Send your solution to answer@prospect-magazine.co.uk or Countrymen/Enigmas, Prospect, 25 Sackville Street, London W1S 3AX. Include your email and postal address. All entries must be received by 8th September. Winners will be announced in our October issue.

Last month’s winners

The generalist: Judith Staines, Devon

Enigmas & puzzles: David Johnson, Oxford

Download a PDF of this page at www.prospectmagazine.co.uk