(Continued from page 112)

P6. (Conjecture). If $a_1 < a_2 < \ldots$ is a sequence of positive integers with $a_n / a_{n+1} \to 1$ and if for every d, every residue class (mod d) is representable as the sum of distinct a's, then at most a finite number of positive integers are not representable as the sum of distinct a's.

P. Erdős

## SOLUTIONS

Problem 5. of sixth issue of Newsletter C.M.C.

Prove that for every positive integer n, the expression

$$(3+2\sqrt{2})^{2n-1} + (3-2\sqrt{2})^{2n-1} - 2$$

is a square.

L. Moser

Solution. Set $a = \sqrt{2}+1$, $b = \sqrt{2}-1$. Then $a^2 = 3+2\sqrt{2}$, $b^2 = 3-2\sqrt{2}$ and $ab = 1$. Hence

$$(3+2\sqrt{2})^{2n-1} + (3-2\sqrt{2})^{2n-1} - 2 = (a^{2n-1} - b^{2n-1})^2 .$$

Since 2n-1 is odd, it is clear that $a^{2n-1} - b^{2n-1}$ is an integer.

R. Ree



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