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P R O B L È M E S

P 34, R 2. Sous l'hypothèse que E est dénombrable, la réponse à la première question est positive (1).

I.2, p. 152, et XLIII.2, p. 385.

(1) R. O. Davies and A. J. Ostaszewski, *Denumerable compact metric spaces admit isometry-invariant finitely additive measure*, Mathematika 26 (1979), p. 184-186.

P 644, R 2. The answer to the first question is in general negative (2).

XIX.2, p. 334, et XXVIII.2, p. 329.

(2) D. Pigozzi, *On the structure of equationally complete varieties. I*, this fascicle, p. 191-201.

P 1018, R 1. The answer is negative (3).

XXXVII.2, p. 329.

(3) M. De Wilde and B. Tsirulnikov, *Barelledness and the supremum of two locally convex topologies*, Mathematische Annalen 246 (1980), p. 241-248, Corollary 2.5.

P 1046, R 1. The answer is negative (4).

XL.1, p. 189.

(4) J. C. Smith, *Applications of shrinkable covers*, Proceedings of the American Mathematical Society 73 (1979), p. 379-387, Corollary 2.5.

P 1162, R 1. W. Wessel (5) has observed that if for the u's one takes all positive integers not exceeding n which are congruent mod 32 to 1, 5, 9, 10, 13, 14, 17, 21, 25, 29, 30, then no sum of two of them is a square. This can be seen by congruential considerations. Consequently, one has

$$\max l \geqslant \left(\frac{11}{32} + o(1)\right) n. \tag{1}$$

More precisely, the following hold:

$$\max l \geqslant \left(11\left[\frac{n+23}{32}\right]+2\right) n \left(32\left[\frac{n+23}{32}\right]+8\right)^{-1} \quad \text{for } n \neq 28,$$

$$\max l \geqslant \left[\frac{11}{32} n\right] \quad \text{for every } n.$$

The estimate (1) has been found independently by J. P. Massias [6] by means of the same arithmetic progressions.

XLII, p. 399 [7].

[5] Manuscript submitted to the Editors in July 1980.

[6] Reported at a meeting on analytic number theory in Oberwolfach, November 1980.

[7] P 1162 has been presented inexactly: in the assumption "$1 \leqslant u_1 < \ldots < u_l < n$" the last inequality has been omitted.

DON PIGOZZI (AMES, IOWA)

P 1233. Formulé dans la communication *On the structure of equationally complete varieties. I.*

Ce fascicule, p. 194.

ZBIGNIEW PIOTROWSKI (WROCŁAW)

P 1234. Formulé dans la communication *On simultaneous Blumberg sets.*

Ce fascicule, p. 213.

WITOLD BULA (KATOWICE)

P 1235. Formulé dans la communication *On continua having three types of open subsets.*

Ce fascicule, p. 225.

T. MAĆKOWIAK (WROCŁAW)

P 1236 et **P 1237.** Formulés dans la communication *The fixed point property for set-valued mappings.*

Ce fascicule, p. 240 et 241.

C. C. TRAVIS (OAK RIDGE, TENNESSEE) AND G. F. WEBB (NASHVILLE, TENNESSEE)

P 1238 et **P 1239.** Formulés dans la communication *Perturbation of strongly continuous cosine family generators.*

Ce fascicule, p. 284.

GEORGE M. RASSIAS (ATHENS)

Let M be a closed (i.e., compact without boundary) C^∞ differentiable manifold of dimension m and let $f\colon M \to \boldsymbol{R}$ be a C^∞ differentiable real-valued function on M. We define the Morse-Smale characteristic of M as

$$\mu(M) = \min_{f \in \Omega} \sum_{i=0}^{m} c_i(M, f),$$

where Ω is the space of Morse functions on M and $c_i(M, f)$ is the number of critical points of index i of f in Ω.

P 1240. For what closed C^∞ differentiable manifolds M is it true that $\mu(M \times M) = \mu(M) \cdot \mu(M)$?

P 1241. Given a (fixed) closed C^∞ differentiable manifold M, determine for what closed C^∞ differentiable manifolds N it is true that $\mu(M \times N) = \mu(M) \cdot \mu(N)$.

P 1242. For what pairs (M, N) of closed C^∞ differentiable manifolds M and N is it true that $\mu(M \times N) = \mu(M) \cdot \mu(N)$? (Of course, $\mu(M \times N) \leqslant \mu(M) \cdot \mu(N)$ for any M and N.) It is known that the answer is positive in the case

$$\mu(M) = \sum_{i=0}^{m} R_i(M), \qquad \mu(N) = \sum_{i=0}^{n} R_i(N),$$

where $m = \dim M$, $n = \dim N$, and $R_i(M)$, $R_i(N)$ are the i-th Betti numbers of M, N, respectively.

P 1243. Determine the class of closed C^∞ differentiable manifolds M for which $\mu(M \times N) = \mu(M) \cdot \mu(N)$ holds for every closed C^∞ differentiable manifold N.