

Melvyn B. Nathanson

Mathematics papers

1971

1. Derivatives of binary sequences, *SIAM J. Applied Math.* 21 (1971), 407–412.

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2. An exponential congruence of Mahler, *Amer. Math. Monthly* 79 (1972), 55–57.
3. On the greatest order of an element of the symmetric group, *Amer. Math. Monthly* 79 (1972), 500–501.
4. Complementing sets of n -tuples of integers, *Proc. Amer. Math. Soc.* 34 (1972), 71–72.
5. Integrals of binary sequences, *SIAM J. Applied Math.* 23 (1972), 84–86.
6. Shift dynamical systems over finite fields, *Proc. Amer. Math. Soc.* 34 (1972), 591–594.
7. Sums of finite sets of integers, *Amer. Math. Monthly* 79 (1972), 1010–1012.

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8. On the fundamental domain of a discrete group, *Proc. Amer. Math. Soc.* 41 (1973), 629–630.

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9. Catalan's equation in $K(t)$, *Amer. Math. Monthly* 81 (1974), 371–373.
10. Minimal bases and maximal nonbases in additive number theory, *J. Number Theory* 6 (1974), 324–333.
11. Approximation by continued fractions, *Proc. Amer. Math. Soc.* 45 (1974), 323–324.

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12. Products of sums of powers, *Math. Magazine* 48 (1975), 112–113.
13. Maximal asymptotic nonbases (with P. Erdős), *Proc. Amer. Math. Soc.* 48 (1975), 57–60.

14. Linear recurrences and uniform distribution, *Proc. Amer. Math. Soc.* 48 (1975), 289–291.
15. Round metric spaces, *Amer. Math. Monthly* 82 (1975), 738–741.
16. Essential components in discrete groups, *Amer. Math. Monthly* 82 (1975), 834.
17. An algorithm for partitions, *Proc. Amer. Math. Soc.* 52 (1975), 121–124.
18. Oscillations of bases for the natural numbers (with P. Erdős), *Proc. Amer. Math. Soc.* 53 (1975), 253–258.

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19. Polynomial Pell’s equations, *Proc. Amer. Math. Soc.* 56 (1976), 89–92.
20. Partial products in finite groups, *Discrete Math.* 15 (1976), 201–203.
21. Partitions of the natural numbers into infinitely oscillating bases and non-bases (with P. Erdős), *Commentarii Mathematici Helvetici* 52 (1976), 171–182.
22. Mellin’s formula and some combinatorial identities (with S. Chowla), *Monatshefte für Mathematik* 81 (1976), 261–265.
23. Piecewise linear functions with almost all points eventually periodic, *Proc. Amer. Math. Soc.* 60 (1976), 75–81.
24. Difference operators and periodic sequences over finite modules, *Acta Mathematica Academiae Scientiarum Hungaricae* 29 (1976), 219–224.
25. Prime polynomial sequences (with S. D. Cohen and P. Erdős), *J. London Math. Soc.* 14 (1976), 559–562.

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26. Permutations, periodicity, and chaos, *J. Combinatorial Theory* 22 (1977), 61–68.
27. s -maximal nonbases of density zero, *J. London Math. Soc.* 15 (1977), 29–34.
28. Nonbases of density zero not contained in maximal nonbases (with P. Erdős), *J. London Math. Soc.* 15 (1977), 403–405.
29. Asymptotic distribution and asymptotic independence of sequences of integers, *Acta Mathematica Academiae Scientiarum Hungaricae* 29 (1977), 207–218.

30. Oscillations of bases in number theory and combinatorics, in: *Number Theory Day, New York 1976*, Lecture Notes in Mathematics, Vol. 626, Springer-Verlag, Berlin, 1977, pp. 217–231.

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31. Multiplication rules for polynomials, *Proc. Amer. Math. Soc.* 69 (1978), 210–212.
32. Sets of natural numbers with no minimal asymptotic bases (with P. Erdős), *Proc. Amer. Math. Soc.* 70 (1978), 16–20.
33. Representation functions of sequences in additive number theory, *Proc. Amer. Math. Soc.* 72 (1978), 16–20.
34. Monomial congruences, *Monatshefte für Mathematik* 85 (1978), 199–200.

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35. Bases and nonbases of square-free numbers (with P. Erdős), *J. Number Theory* 11 (1979), 197–208.
36. On additive h -bases for lattice points, *Annals of the New York Academy of Sciences* 319 (1979), 413–414.
37. Systems of distinct representatives and minimal bases in additive number theory (with P. Erdős), in: *Number Theory, Carbondale 1979*, Lecture Notes in Mathematics, Vol. 751, Springer-Verlag, Berlin, pp. 89–107.

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38. Classification problems in K -categories, *Fundamenta Mathematicae* 105 (1980), 187–197.
39. Sumsets of measurable sets, *Proc. Amer. Math. Soc.* 78 (1980), 59–63.
40. Sumsets contained in infinite sets of integers, *J. Combinatorial Theory, Ser. A*, 28 (1980), 150–155.
41. Lagrange's theorem with $N^{1/3}$ squares (with S. L. G. Choi and P. Erdős), *Proc. Amer. Math. Soc.* 79 (1980), 203–205.
42. Connected components of arithmetic graphs, *Monatshefte für Mathematik* 89 (1980), 219–220.
43. Minimal asymptotic bases for the natural numbers (with P. Erdős), *J. Number Theory* 12 (1980), 154–159.

44. Arithmetic progressions contained in sequences with bounded gaps, *Canadian Math. Bulletin* 23 (1980), 491–493.

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45. Lagrange’s theorem and thin subsequences of squares (with P. Erdős), in: J. Gani and V. K. Rohatgi (eds.), *Contributions to Probability*, Academic Press, New York, 1981, pp. 3–9.
46. Waring’s problem for sets of density zero, in: M. I. Knopp (ed.), *Number Theory, Philadelphia 1980*, Lecture Notes in Mathematics, Vol. 899, Springer-Verlag, Berlin, 1981, pp. 301–310.

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47. Largest and smallest maximal sets of pairwise disjoint partitions, *J. Number Theory* 17 (1983), 103–112.

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48. The exact order of subsets of additive bases, in: *Number Theory, New York 1982*, Lecture Notes in Mathematics, Vol. 1052, Springer-Verlag, Berlin, 1984, pp. 273–277.

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49. Co-finite subsets of asymptotic bases for the positive integers (with J. C. M. Nash), *J. Number Theory* 20 (1985), 363–372.

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50. Divisibility properties of additive bases for the integers, *Proc. Amer. Math. Soc.* 96 (1986), 11–14.
51. Waring’s problem for finite intervals, *Proc. Amer. Math. Soc.* 96 (1986), 15–17.
52. Independence of solution sets in additive number theory (with P. Erdős), in: G.-C. Rota, ed., *Probability, Statistical Mechanics, and Number Theory*, Academic Press, New York, 1986, pp. 97–105.

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53. A short proof of Cauchy’s polygonal number theorem, *Proc. Amer. Math. Soc.* 99 (1987), 22–24.

- 54. Problems and results on minimal bases in additive number theory (with P. Erdős), in: *Number Theory, New York 1984–1985*, Lecture Notes in Mathematics, Vol. 1240, Springer–Verlag, Heidelberg, 1987, pp. 87–96.
- 55. Thin bases in additive number theory, in: Journées Arithmétiques de Besançon, 24–28 Juin 1985, Société Mathématique de France, *Astérisque* 147–148 (1987), 315–317.
- 56. An extremal problem for least common multiples, *Discrete Math.* 64 (1987), 221–228.
- 57. Multiplicative representations of integers, *Israel J. Math.* 57 (1987), 129–136.
- 58. Sums of polygonal numbers, in: *Analytic Number Theory and Diophantine Problems*, Birkhäuser Boston, 1987, pp. 305–316.
- 59. A generalization of the Goldbach–Shnirel’man theorem, *Amer. Math. Monthly* 94 (1987), 768–771.

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- 60. Sumsets containing infinite arithmetic progressions (with P. Erdős and A. Sárközy), *J. Number Theory* 28 (1988), 159–166.
- 61. Partitions of bases into disjoint unions of bases (with P. Erdős), *J. Number Theory* 29 (1988), 1–9.
- 62. Minimal asymptotic bases with prescribed densities (with P. Erdős), *Illinois J. Math.* 32 (1988), 562–574.
- 63. Minimal bases and powers of 2, *Acta Arithmetica* 49 (1988), 525–532.
- 64. Simultaneous systems of representatives for families of finite sets, *Proc. Amer. Math. Soc.* 103 (1988), 1322–1326.

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- 65. On the maximum density of minimal asymptotic bases (with A. Sárközy), *Proc. Amer. Math. Soc.* 105 (1989), 31–33.
- 66. Combinatorial pairs, and sumsets contained in sequences, *Annals of the New York Academy of Sciences* 555 (1989), 316–319.
- 67. Sumsets containing k -free integers, in: H. P. Schlickerei and E. Wirsing (eds.), *Number Theory, Ulm 1987*, Lecture Notes in Mathematics, Vol. 1380, Springer–Verlag, Berlin, 1989, pp. 179–184.

- 68. Long arithmetic progressions and powers of 2, in: J.M. De Koninck and C. Levesque (eds.), *Théorie des nombres*, Walter de Gruyter, Berlin and New York, 1989, pp. 735–739.
- 69. A simple construction of minimal asymptotic bases (with X.-D. Jia), *Acta Arithmetica* 52 (1989), 95–101.
- 70. Additive problems in combinatorial number theory, in: *Number Theory, New York 1985–1988*, Lecture Notes in Mathematics, Vol. 1383, Springer-Verlag, Berlin, 1989, pp. 123–139.
- 71. Additive bases with many representations (with P. Erdős), *Acta Arithmetica* 52 (1989), 399–406.
- 72. Sumsets containing long arithmetic progressions and powers of 2 (with A. Sárközy), *Acta Arithmetica* 54 (1989), 147–154.
- 73. Two applications of combinatorics to number theory, *Annals of the New York Academy of Sciences* 576 (1989), 408–410.
- 74. Simultaneous systems of representatives and combinatorial number theory, *Discrete Math.* 79 (1989), 197–205.

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- 75. Extremal properties for bases in additive number theory, *Colloquia Mathematica Societatis Janos Bolyai* 51 (1990), 437–446.
- 76. Best possible results on the density of sumsets, in: B. Berndt, H. Diamond, H. Halberstam, and A. Hildebrand (eds.), *Analytic Number Theory*, Birkhäuser-Verlag, Boston, 1990, pp. 395–403.

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- 77. On a problem of Rohrbach for finite groups, *J. Number Theory* 41 (1992), 69–76.

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- 78. The simplest inverse problems in additive number theory, in: A. D. Pollington and W. Moran (eds.), *Number Theory with an Emphasis on the Markoff Spectrum*, Marcel Dekker, New York, 1993, pp. 191–206.

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- 79. An inverse theorem for sums of sets of lattice points, *J. Number Theory* 46 (1994), 29–59.

80. Addition theorems for σ -finite groups (with X.-D. Jia), in: G. Andrews, D. M. Bressoud, and A. Parsons (eds.), *Proc. Rademacher Centenary Conference*, Contemporary Mathematics, Amer. Math. Soc., Providence, vol. 166, 1994, pp. 275–284.

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81. Independence of solution sets and minimal asymptotic bases (with P. Erdős and P. Tetali), *Acta Arithmetica* 69 (1995), 243–258.
82. An inverse theorem for subset sums, *Trans. Amer. Math. Soc.* 347 (1995), 1409–1418.
83. Adding distinct congruence classes modulo a prime, (with N. Alon and I. Ruzsa), *Amer. Math. Monthly* 102 (1995), 250–255.

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84. The polynomial method and restricted sums of congruence classes (with N. Alon and I. Ruzsa), *J. Number Theory* 56 (1996), 404–417.
85. On the sum of the reciprocals of the differences between consecutive primes, (with P. Erdős), *Number Theory: New York Seminar, 1991–95*, Springer–Verlag, 1996, pp. 97–101.
86. Finite graphs and the number of sums and products (with X.-D. Jia), in: *Number Theory: New York Seminar, 1991–1995*, Springer–Verlag, 1996, pp. 211–219.
87. Metric theorems on minimal bases and maximal nonbases (with A. Sárközy), *Studia Sci. Math. Hungar.* 32 (1996), 207–226.

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88. On sums and products of integers, *Proc. Amer. Math. Soc.* 125 (1997), 9–16.
89. Ballot numbers, alternating products, and the Erdős–Heilbronn conjecture, in: R. L. Graham and J. Nešetřil (eds.), *The Mathematics of Paul Erdős, Vol. I*, Springer–Verlag, Berlin, 1997, pp. 199–217.

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90. Linear forms in finite sets of integers (with S.-P. Han and C. Kirfel), *Ramanujan Journal* 2 (1998), 271–281.
91. The Erdős paradox, in: *Paul Erdős in Zentralblatt MATH: Reviews of His Papers and Articles about His Life*, a compact disc published by Springer–Verlag, Berlin, 1998.

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92. Number theory and semigroups of intermediate growth, *Amer. Math. Monthly* 106 (1999), 666–669.
93. Inverse theorems and the number of sums and products (with G. Tenenbaum), in: *Structure Theory of Set Addition*, Astérisque, volume 258, 1999, pages 195–204.

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94. Asymptotic density and the asymptotics of partition functions, *Acta Math. Hungar.* 87:3 (2000), 179–195.
95. N -graphs, modular Sidon and sum-free sets, and partition identities, *Ramanujan J.* 4 (2000), 59–67.
96. Growth of sumsets in abelian semigroups, *Semigroup Forum* 61 (2000), 149–153.
97. Partitions with parts in a finite set, *Proc. Amer. Math. Soc.* 128 (2000), 1269–1273.
98. Convexity and sumsets (with G. Elekes and I. Z. Ruzsa), *J. Number Theory* 83 (2000), 194–201.

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99. On Erdős's elementary method in the asymptotic theory of partitions, in: *Paul Erdős and his Mathematics, I*, Springer-Verlag, Berlin, 2002, pp. 515–531.
100. Polynomial growth of sumsets in abelian semigroups (with I. Z. Ruzsa), *Journal de Théorie des Nombres de Bordeaux*, 14:2 (2002), 553–560.

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101. Unique representation bases for the integers, *Acta Arith.* 108 (2003), 1–8.
102. A functional equation arising from multiplication of quantum integers, *J. Number Theory* 103 (2003), 214–233.

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103. The inverse problem for representation functions of additive bases, in: *Number Theory: New York Seminar 2003*, Springer, 2004, pages 253–262.
104. On the ubiquity of Sidon sets, in: *Number Theory: New York Seminar 2003*, Springer, 2004, pages 263–272.

105. Formal power series arising from multiplication of quantum integers, in: *Unusual Applications of Number Theory*, Amer. Math. Soc., 2004.
106. Additive number theory and the ring of quantum integers, in: *General Theory of Information Transfer and Combinatorics*, Springer, to appear. (arXiv: math.NT/0204006)
107. An application of König's lemma to additive number theory, *J. Number Theory*, to appear. (arXiv: math.NT/0302155)
108. Representation functions of additive bases for abelian semigroups, *Inter. J. Math. Math. Sci.*, to appear. (arXiv: math.NT/0211204)
109. Every function is the representation function of an additive basis for the integers, *Port. Math.*, to appear. (arXiv: math.NT/0302091)
110. Quantum integers and cyclotomy (with A. Borisov and Y. Wang), submitted. (arXiv: math.NT/0310005)
111. Semidirect products and quantum multiplication, preprint.
112. Representation functions and Sidon sets (with J. Cilleurelo), preprint.
113. The additive h -spectrum for asymptotic bases, preprint.