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On the b-ary expansion of e

Let b ≥ 2 be an integer. The exponent vb (resp., vb′) and the uniform
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rational numbers whose denominator is a power of b (resp., is of the form br(bs − 1)). Said differently and informally, we look at the lengths of the blocks of digit 0 (or of digit (b − 1)) and at the lengths of repeated blocks in the base-b expansion of a
exponent v□b (resp., v□) measure the quality of approximation to a real number by b
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real number. We discuss several results on these four exponents and explain how aninequality between v and v□ implies that the base-b expansion of any real number whose irrationality exponent is sufficiently close to 2 cannot be too 'simple', in the sense that it contains at least cn different blocks of digits of length n, for some c > 1 and every integer n sufficiently large. In particular, the b-ary expansion of e contains at least 10n/9 different blocks of digits of length n, if n is large enough.