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The powers that be. (In English)

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Given a positive integer n and an integer $a > 1$, the unique integer such that $a_m \leq n < a^{m+1}$ is called the exponent of a for n . For given n , let E_n denote the set of (distinct) exponents for n , when we allow a to assume all integers > 1 , and similarly let $E_p(n)$ denote the set of exponents for n when we restrict a to only prime values. If m is an exponent for n , let a_m and b_m denote the smallest and largest integer with m as exponent. Similarly let p_m and q_m denote the smallest and largest prime with exponent m . A number of questions were raised by the authors regarding E_n , $E_p(n)$, a_m , b_m , p_m , q_m . Answers or partial answers to some of these questions were given.

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Classification:

11A05 Multiplicative structure of the integers

11N05 Distribution of primes