

COUNTING PARTITIONS OF A FIXED GENUS

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Abstract

We show that, for any fixed genus g , the ordinary generating function for the genus g partitions of an n -element set into k blocks is algebraic. The proof involves showing that each such partition may be reduced in a unique way to a primitive partition and that the number of primitive partitions of a given genus is finite. We illustrate our method by finding the generating function for genus 2 partitions, after identifying all genus 2 primitive partitions, using a computer-assisted search.

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