Analogy between optical interferometry and integer factorization inspires novel mathematical results GABRIEL SEIDEN, Weizmann Institute of Science — Prime factorization of integers is an outstanding problem in arithmetic with important consequences in a variety of fields, most notably cryptography. We explore the intriguing relationship between prime factorization and optical interferometry with the aim of obtaining novel analytic expressions for number-theoretic functions directly related to prime factorization [1]. [1] G. Seiden, Phys. Rev. A 85, 043842 (2012)