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4/24/2014

This project requires an understanding of the Euler Phi Function, also known as the Totient Function.  $\phi(n)$ . Euler's Totient function is defined as the number of positive integers  $\leq n$  that are relatively prime to (i.e. do not contain any factor in common with)  $n$ , where 1 is counted as being relatively prime to all numbers. The Euler phi function, starting with  $n$  at 1 goes like this 1, 1, 2, 2, 4, 2, 6, 4, 6, 4.

If a number is a prime, then the Euler phi function of a prime number is one less than that number. This is true because all the numbers less than a prime are relatively prime to that prime number.

#### References

Online encyclopedia of Integer sequences (OEIS) Sloans A0000010

Weinstein, Eric W "Totient Function" from Mathworld – A Wolfram Web Resource

<http://mathworld.wolfram.com/TotientFunction.html>