**Perfect Numbers**

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[Previously Published Here](https://sites.google.com/site/vinceandcode/number-theory/perfect)

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| <http://www.daviddarling.info/images2/Euclid.jpg>  **what is a perfect number?**  If the sum of all the proper divisor of an integer (excluding itself) is equal to that integer then that integer is a perfect number.  or we can say, n is a perfect number if the sum of  all the proper divisor of n (except n) is equal to n;  [notes: some says only positive integers some disagrees, but that's not what we are going to cook here ]  let's say n = 6;  1 is a proper divisor of 6;  2 is a proper divisor of 6;  3 is a proper divisor of 6;  6 is a proper divisor of 6; (but we will not count six)  now 1 + 2 + 3 = 6;  so 6 is a perfect number;  In 4th century B.C Euclid first came up with this. he discovered 4 perfect numbers in his lifetime  6  28  496  8128  those were the only perfect numbers known for more than 1800 years  Even now with our supercomputers human race has only manage to find out upto 48 perfect numbers. still we don't know is there more? or is there infinite perfect numbers?  it may sounds like stupid but yeah we still don't know.  Theres only 1 perfect number between   1 to 10  10 to 100  100 to 1000  1000 to 10,000  10,000 to 10,0000000  lets stop here :3  seems like it follows a flow  so whats it? can you figure it out?  2^(p-1) \* (2^p - 1)  [https://sites.google.com/site/vinceandcode/_/rsrc/1435402294430/number-theory/perfect/PR.png](https://sites.google.com/site/vinceandcode/number-theory/perfect/PR.png?attredirects=0)  YEAH! so now you can implement this on your perfect number generating code if you need it, instead incrementing an integer, dividing it with 1 to <integer, keeping the track or summing the proper divisors and then checking whether its perfect or not, if not lets increment it again :v. huge time consuming stuff. and now you know it.  Have a nice day!! |