Euler' Totient function, phi (n) [sometimes called the phi function], is defined as the number of positive integers not exceeding n which are relatively prime to n. For example, as 1, 2, 4, 5, 7, and 8, are all less than or equal to nine and relatively prime to nine, phi(9) = 6.

lt can be seen that n 6 produces a maximum n/phi(n) for n <= 10.

Find the value of n <= 1000 000 for which n/phi(n) is a maximum.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1/8 | 1/7 | 1/6 | 1/5 | 1/4 | 2/7 | 1/3 | 3/8 | 2/5, |  |
| 7/8 | 6/7 | 5/6 | 4/5 | 3/4 | 5/7 | 2/3 | 5/8 | 3/5 |  |

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