

## Abundant, deficient and perfect number classifications

These define three classifications of positive integers based on their proper divisors.

Let  $P(n)$  be the sum of the proper divisors of  $n$  where proper divisors are all positive integers  $n$  other than  $n$  itself.





If  $P(n) < n$  then  $n$  is classed as deficient

If  $P(n) == n$  then  $n$  is classed as perfect

If  $P(n) > n$  then  $n$  is classed as abundant

**Example:** 6 has proper divisors of 1, 2, and 3.  $1 + 2 + 3 = 6$ , so 6 is classed as a perfect number.

Implement a function that calculates how many of the integers from 1 to  $num$  (inclusive) are in each of the three classes. Output the results as an array in the following format `[deficient, perfect, abundant]`.

	<code>getPDA</code> should be a function.
	<code>getPDA(5000)</code> should return an array.
	<code>getPDA(5000)</code> return array should have a length of 3.
	<code>getPDA(5000)</code> should return <code>[3758, 3, 1239]</code> .