**Курсова работа**

Дадени са 8 условия на задачи. Моля да подготвите програмен код за тяхното решаване.

Създайте текстов документ, и поставете в него условието на задачите, подготвеният от вас програмен код, след което скрийншот на черния конзолен екран на работещата програма.

Оформете текстовия документ като курсова работа, съгласно Наредба за подготовка и защита на писмени работи (<https://www.unibit.bg/documents> ).

Носете така оформената курсова работа в деня на изпита. Курсовата работа е задължителна.

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| 1 | If we list all the natural numbers below 10 that are multiples of 3 or 5, we get 3, 5, 6 and 9. The sum of these multiples is 23.  Find the sum of all the multiples of 3 or 5 below 1000. |
| 2 | Each new term in the Fibonacci sequence is generated by adding the previous two terms. By starting with 1 and 2, the first 10 terms will be:  1, 2, 3, 5, 8, 13, 21, 34, 55, 89, ...  By considering the terms in the Fibonacci sequence whose values do not exceed four million, find the sum of the even-valued terms. |
| 3 | The prime factors of 13195 are 5, 7, 13 and 29.  What is the largest prime factor of the number 600851475143 ? |
| 4 | A palindromic number reads the same both ways. The largest palindrome made from the product of two 2-digit numbers is 9009 = 91 × 99.  Find the largest palindrome made from the product of two 3-digit numbers. |
| 5 | 2520 is the smallest number that can be divided by each of the numbers from 1 to 10 without any remainder.  What is the smallest positive number that is evenly divisible by all of the numbers from 1 to 20? |
| 6 |  |
| 7 | By listing the first six prime numbers: 2, 3, 5, 7, 11, and 13, we can see that the 6th prime is 13.  What is the 10 001st prime number? |
| 9 |  |