

Another Contest 4 Problem 9 - Fast Fourier Transform!

Time limit: 1.0s **Memory limit:** 256M

Of course there's a Fast Fourier Transform problem in this contest! There may be number theory involved!

```
vector<int> f(int n)
```

You may assume $1 \leq n \leq 10^6$ - though in practice there is only one test case, so maybe you can guess the value of n beforehand!