

Cryptographic hash functions are mathematical operations run on digital data; by comparing the computed *hash* (i.e., the output produced by executing a hashing algorithm) to a known and expected hash value, a person can determine the data's integrity. For example, computing the hash of a downloaded file and comparing the result to a previously published hash result can show whether the download has been modified or tampered with. In addition, cryptographic hash functions are extremely collision-resistant; in other words, it should be extremely difficult to produce the same hash output from two different input values using a cryptographic hash function.

*Secure Hash Algorithm 2 (SHA-2)* is a set of cryptographic hash functions designed by the National Security Agency (NSA). It consists of six identical hashing algorithms (i.e., *SHA-256*, *SHA-512*, *SHA-224*, *SHA-384*, *SHA-512/224*, *SHA-512/256*) with a variable digest size. *SHA-256* is a **256-bit (32 byte)** hashing algorithm which can calculate a hash code for an input of up to **2<sup>64</sup> − 1** bits. It undergoes **64** rounds of hashing and calculates a hash code that is a **64-digit** hexadecimal number.

Given a string, ***s***, print its *SHA-256* hash value.

### Input Format

A single alphanumeric string denoting ***s***.

### Constraints

- $6 \leq |s| \leq 20$
- String ***s*** consists of English alphabetic letters (i.e., [***a*** − ***zA*** − ***Z***] and/or decimal digits (i.e., **0** through **9**) only.

### Output Format

Print the *SHA-256* encryption value of ***s*** on a new line.

### Sample Input 0

HelloWorld

### Sample Output 0

872e4e50ce9990d8b041330c47c9ddd11bec6b503ae9386a99da8584e9bb12c4

### Sample Input 1

Javarmi123

### Sample Output 1

f1d5f8d75bb55c777207c251d07d9091dc10fe7d6682db869106aacb4b7df678