

# RSA Express Encryption/Decryption Calculator

This worksheet is provided for message encryption/decryption with the RSA Public Key scheme. No provisions are made for high precision arithmetic, nor have the algorithms been encoded for efficiency when dealing with large numbers.

To use this worksheet, you must supply:

- a modulus **N**, and either:
  - a plaintext message **M** and encryption key **e**, OR
  - a ciphertext message **C** and decryption key **d**.

The values of **N**, **e**, and **d** must satisfy certain properties. See [RSA Calculator](#) for help in selecting appropriate values of **N**, **e**, and **d**.

[JL Popyack](#), December 2002. Revised December 2012

The largest integer your browser can represent exactly is 9007199254740991 .

To encrypt a message, enter valid modulus **N** below. Enter encryption key **e** and plaintext message **M** in the table on the left, then click the **Encrypt** button. The encrypted message appears in the lower box.

To decrypt a message, enter valid modulus **N** below. Enter decryption key **d** and encrypted message **C** in the table on the right, then click the **Decrypt** button. The decrypted message appears in the lower box.

Supply Modulus: N

Supply Encryption Key and Plaintext message M:

Encryption Key: e

Plaintext Message to encode:

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Encrypt

Plaintext Message in numeric form:

084 114 097 110 113 117 105 108 111 033 032 080 114 111 102 046 032 077 097 114 099 101 108 032 083 046 032 087 097 103 110 101 114 046

Encrypted Message in numeric form:

339 45 79 36 107 77 265 301 304 356 315 181 45 304 34 368 315 236 79 45 228 16 301 315 145 368 315 59 79 273 36 16 45 368

OR

Supply Decryption Key and Ciphertext message C:

Decryption Key: d

Ciphertext Message in numeric form:

339 45 79 36 107 77 265 301 304 356 315 181 45 304 34 368 315 236 79 45 228 16 301 315 145 368 315 59 79 273 36 16 45 368

Decrypt

Decrypted Message in numeric form:

84 114 97 110 113 117 105 108 111 33 32 80 114 111 102 46 32 77 97 114 99 101 108 32 83 46 32 87 97 103 110 101 114 46

Decrypted Message in text form:

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Reset all

https://www.cs.drexel.edu/~jpopyack/Courses/CSP/Fa17/notes/10.1\_Cryptography/RSA\_Express\_EncryptDecrypt\_v2.html

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