

RSA exercises

Answer the following questions, and show some of your computations:

1. You are a receiver with $p = 5$, $q = 7$. You make the modulus $m = 35$ public.

You also choose the exponent $e = 5$ and make that public.

Messages to you come one letter at a time. Letters correspond to numbers as usual ($A \leftrightarrow 0$, $B \leftrightarrow 1$, and so forth).

The following message comes for you:

17 19 7 9 0 12 24

Decode it.

2. Bob's modulus m is 15 and his exponent e is 3. Send him the message

A C H E A N D

(Even though the modulus is 15, and this is less than 26, the above letters all have numbers below 15.)

3. (Show your erudition—not required) The above two messages are the first words of a famous poem. What is it? (I've dropped one letter in the text to make this cipher work. Which letter is this?)