1. Numbers printed out: 15, 46, 23, 70, 35, 106, 53, 160, 80, 40, 20, 10, 5, 16, 8, 4, 2, 1
2. Numbers printed out: 6, 3, 10, 5, 16, 8, 4, 2, 1
3. Create a new String containing the alphabet with the order of letters shifted as required.

Create a new String containing the original alphabet.

For all characters in the message

Create a new int variable named index, which stores the value of index of the current character within the alphabet string

Create an empty string to store the result, named result.

If the value of index is -1

Concatenate the current character to the result string

Else

Concatenate the letter at position index of our new alphabet string to the result string

Return the result string.

1. The message is “puzzles are fun”.

For all possible shifts

Translate the original message with the current shift.

For all words in this message

Look up the current word in dictionary

If it cannot be found

End this loop and try the next shift

If all words in this translated message can be found in the dictionary

Return this translated message