

Student	Bo Dong	54
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Part 1

	Available	Marks
Create a matrix <i>message1</i> that contains the character data above, together with the numerical labels for rows and columns. Display this matrix.	5	4
Generate the ciphertext using the following ruleset: Start at 5,5 and work towards the left. Read odd-numbered columns upwards and even-numbered columns downwards. Display the encrypted message as a vector <i>ciphertext1</i> which contains each character of the ciphertext as a separate element in the vector.	20	15
Suppose that the message is written in a 3x9 array rather than a 5x5 array. Generate an appropriate matrix <i>message2</i> and use the two methods given in the introduction to generate two more vectors <i>ciphertext2</i> and <i>ciphertext3</i> .	15	13
Which of the two matrices, <i>message1</i> or <i>message2</i> do you think produces the most secure encryption methods? In a comment at the end of your script say which you think is the most secure and why this is the case. Do not write more than 100 words on this.	5	3
Commenting and use of white space	5	1
	TOTAL	36
Comments 1.5 The script should be called cipher.R, not task1.R Remember to include your name and student number in the comments at the start of the script. More comments are needed throughout. 1.1 The matrix should be called message1, not m. 1.2 Remember to use the variable names given in the assignment, don't just make them up. The solution is fine otherwise. 1.3 Good use of loops to do the second method. 1.4 Good reasoning.		

Part 2

	Available	Marks
Create an appropriate matrix to hold the decrypted message and populate it from the ciphertext. Display the matrix once it has been populated. METHOD 1	13	13
Create an appropriate matrix to hold the decrypted message and populate it from the ciphertext. Display the matrix once it has been populated. METHOD 2	13	0
Create an appropriate matrix to hold the decrypted message and populate it from the ciphertext. Display the matrix once it has been populated. METHOD 3	13	0
Which of the two matrices, 5x5 or 9x6, do you think produces the most secure encryption methods? In a comment at the end of your script say which you think is the most secure and why this is the case. Do not write more than 100 words on this.	6	3
Commenting and use of white space	5	2
	TOTAL	18
Comments .5 The script should be called decipher.R, not task1.R Remember to include your name and student number in the comments at the start of the script. More comments are needed throughout. You have correctly decoded the message, but you should also have shown the two other methods that give the incorrect answer. Remember to use the variable names given in the assignment, don't just make them up.		