

Student	Jess Marfell	68%
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Part 1

	Available	Marks
Create a vector <i>v1</i> that contains the values 1 to 16	2	2
Add the values 17 to 20 to the end of <i>v1</i> .	2	2
Delete elements 7, 8, 9 and 16 from <i>v1</i> . You should use a one method to remove elements 7, 8, 9 and another method to remove element 15.	4	4
Using <i>v1</i> , create a new vector <i>v2</i> that contains the 1 st to 4 th and 9 th to 12 th elements of <i>v1</i> .	3	3
Calculate <i>v1-v2</i> and display the results. This will generate a warning; in your comments, explain how R adds two vectors of different lengths	4	4
Create a new vector <i>v3</i> by selecting all odd elements of <i>v1</i> using a filter	2	0
Using a loop, create a new vector <i>v4</i> the same length as <i>v1</i> , that contains the value <i>TRUE</i> if the corresponding element of <i>v1</i> has an integer square root and the value <i>FALSE</i> otherwise. <i>HINT: You will need to use the sqrt() and round() functions</i>	6	6
Create a matrix <i>m1</i> with 4 rows from vector <i>v1</i>	3	3
Create a matrix <i>m2</i> with 2 columns from vector <i>v2</i>	3	3
Swap all of the elements in row 3 of <i>m1</i> with the elements in column 2 of <i>m1</i>	3	3
Create and display a new matrix <i>m3</i> from <i>m1</i> and <i>m2</i> where <i>m3</i> contains all of the columns of both source matrices	3	3
Replace all values in <i>m3</i> that are in (column 2 or column 3) and in (row 1 or row 2) with half their value	2	2
Remove row 1 of <i>m3</i>	4	4
Label the columns of <i>m3</i> as "s1", "s2", "s3", "s4", "s5", and "s6"	1	1
Create a vector <i>mmeans</i> that contains the means of each column	3	1
Create a barplot of <i>mmeans</i>	2	2
Commenting, white space etc.	5	4
TOTAL	52	47

Comments

Good layout and commenting, but more white space is needed between the lines of code. Blocks of text that contain both code and comment without space between them are difficult to read.

Q6 v3 should contain the odd numbers, and this should have been created using a filter, e.g. `v3<-v1[v1%%2==1]`

Q15 You should use `<-` to assign things. You're using `apply()` correctly but not actually assigning it to the vector, e.g. `mmeans<-apply(m3,2,mean)`

Part 2

	Available	Marks
Generate arithmetical and perfect numbers	25	14
Creating and displaying an appropriate data frame	10	2
Updating the data frame	10	3
Commenting and use of white space	5	4
TOTAL	50	23

Comments

Good layout and commenting, but more white space is needed between the lines of code. It's good programming practice to put the function definitions before everything else, even the creation of a data frame.

The calculations for the arithmetic and perfect numbers are fine, but you haven't managed to transfer them into the data frame. Similarly the number of divisors hasn't been added to the data frame. It's a lot easier to generate a Boolean vector for each type of number and then bind it to the data frame.

Overall you've clearly got the idea of performing calculations with R, but you need to work on getting data into and out of data frames.