

Matrix Multiplication Application

The following table provides data on the number of Coronavirus cases in each country:

The number of cases where 'China' is the likely place of exposure are expected to increase **exponentially** at a rate of 4% per day. Whereas 'Outside reporting country and outside China' is expected to grow by 2% per day and 'In reporting country' is expected to make up the majority of the cases with a growth rate of 8% per day.

Country/Territory	Confirmed Cases	From China	From Outside of Country and Outside of China	In Reporting Country
Republic of Korea	763	13	4	605
Japan	144	28	5	104
Singapore	89	24	0	65
Australia	22	12	7	3
Malaysia	22	18	2	2
Vietnam	16	8	0	8
Philippines	3	3	0	0
Cambodia	1	1	0	0

-Let the shaded cells be known as Matrix C-

- 0) Why do you suppose the the number of confirmed cases in Korea (Column 1 of the data) does not equal the sum of the last three columns?
- 1) State the matrix that can be multiplied by Matrix C to recreate the last three columns of this table after 1 day.
- 2) State the matrix that can be multiplied to Matrix C to recreate the last three columns this table after n -days.
- 3) How many total cases of the Corona Virus can we expect Singapore to have after 7-days originating from *inside of Singapore* ?
- 4) State a matrix that can be multiplied to Matrix C to total up the number of confirmed Coronavirus cases.
- 5) Hence, Find the total number of confirmed Corona Virus cases after 14 days in The Republic of Korea.