

Exercice Fractionnal design:

Chemists are trying to determine the tellurium (Te) content in seawater. But the nature and concentration of other metals distort the measurements. The content in tellurium can be either too high or too low depending on the other metals and their concentration. The disruptive metals could be sodium (Na), potassium (K) and calcium (Ca). The following runs were done to study this measure :

N ° essai	Na (2,5-5 g/L)	K (2,5-5 g/L)	Ca (2,5-5 g/L)	Y
1	-1	-1	-1	128
3	-1	1	-1	104
6	1	-1	1	109
8	1	1	1	96

Questions :

- Make this study Using fractionnal design two levels.
- According to the mathematical model, evaluate the concentration of Te in this conditions:
 - $Ca = 3g/L$
 - $K = 2,7g/L$
 - $Na = 4g/L$

-what are the conditions for a maximum value of Te