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| --- | --- |
| **Trial Data** | **Rate = [A]Xa[B]Xb** |
| **Trials** | **[A]** | **[B]** | **r** | * Hold one reactant constant
* Vary one reactant
* Figure out by how much the varied reactant changes concentration (always divide the bigger one by smaller to make the numbers easier)
* Figure out the difference in rate
* Relate the two together
* Find the exponent – that is your order
 |
| **Trial #1** | 0.10 | 0.10 | 2.0 |
| **Trial #2** | 0.10 | 0.20 | 4.0 |
| **Trial #3** | 0.30 | 0.10 | 2.0 |
| **Reactant being held constant** | **Choose Trial #’s** | **Reactant that is Δing** | **Factor by which [ ] is changing (y)****y = [ ] / [ ]** | **Δrate = rf/ri** | **Δrate = yx****(solve for x)** | **x = rxn order with respect to the reactant being changed** |
| A | #1#2 | B | [0.2]/[0.1]= 2 | 4.0/2.0 = 2 | 2 = 2xbXb = 1 | 1st order with respect to B |
| B | #3#1 | A | [0.3]/[0.1]= 3  | 2.0/2.0= 1 | 1 =3xaXa = 0 | 0 order with respect to A |