

Chemguide – questions

ORDERS OF REACTION

1. Write the rate equation in each of the following cases. For each example, state the overall order of the reaction.
 - a) The reaction $A + 2B = C + D$, where the rate of reaction isn't affected by the concentration of A, but is proportional to the square of the concentration of B.
 - b) The reaction $2A + B = 2C + D$, where the rate is proportional to the concentrations of both A and B.
 - c) The reaction $2A = 2B + C$, where the rate is proportional to the concentration of A.
 - d) The reaction $A + B = C + D$, where the rate is proportional to the concentrations of both A and B.
2.
 - a) In the rate equation: $\text{rate} = k[A]^a[B]^b$, what name is given to the symbol k?
 - b) For a given reaction, k isn't always constant. What factors would cause k to change?
 - c) Suppose a rate equation contained the term $[HI]^2$. What exactly do the square brackets mean?

Important: This is only a brief introduction to the terms used in this topic. You *must* practise doing calculations on it. Find out first what sort of calculations your examiners are going to set, and then find practise doing similar examples until you are certain that you can get them right. My calculations book contains 28 pages about orders of reaction, covering all the variations you are likely to come up against, and I can't repeat any of that here.