



$$K_1 = \frac{[X]^x [Y]^y}{[A]^a [B]^b}$$

$$K_2 = \frac{[R]^r [S]^s}{[C]^c [D]^d}$$

Add the two equations (reactions) to get a third equation (reaction)



$$K_3 = \frac{[X]^x [Y]^y [R]^r [S]^s}{[A]^a [B]^b [C]^c [D]^d} = \left( \frac{[X]^x [Y]^y}{[A]^a [B]^b} \right) * \left( \frac{[R]^r [S]^s}{[C]^c [D]^d} \right)$$

$$K_3 = K_1 * K_2$$