

is -1378 kJ, what is the K for this reaction. (Assume T = 25°C)

$$\Delta G^\circ = -RT \ln K$$

$$-1378000 \text{ J} = -8.3145 (298) \ln K$$

$$-1378000/8.3145(298) = \ln K$$

$$556.156 = \ln K$$

$$e^{556.156} = K$$

But for most people this exponential makes your calculator go bezerk  
The problem is that it is such a big number you calculator can't handle the exponents.  
How do you get around this?

$$\begin{aligned} e^{556.156} &= e^{200} \times e^{200} \times e^{156.156} \\ &= 7.23 \times 10^{86} \times 7.23 \times 10^{86} \times 6.57 \times 10^{67} \\ &= 7.23 \times 7.23 \times 6.57 \times 10^{86+86+67} \\ &= 343 \times 10^{239} \\ &= 3.43 \times 10^{241} \end{aligned}$$