At some point around the year 750 people in the Middle East started to get interested in science and mathematics. This resulted in a 'House of Wisdom' being established in Baghdad. One of the most well-known members of this 'House of Wisdom' was a man called Mohammed ibn-Musa al-Khwarizmi. This mathematician was also keen on astronomy and wrote several books about both subjects. However, his most famous work is a book written in 825 entitled '*Hisab al-jabr w'al-musqabalah*'. Its spectacular title is the reason it is famous as '*al-jabr*' became '*algebra*'. So there we have it. Algebra was invented in Baghdad in the year 825. Sort of.

*Problem 1*

* Much of the content of al-Khwarizmi's book was about **equations**. For each of the equations below, write down a sentence in words to describe what it means.

|  |  |  |
| --- | --- | --- |
| **x + 1 = 7** | **3g = 42** | **4m – 1 = 19** |

Of course, back in the time of al-Khwarizmi people in Europe were still using Roman numerals: I, II, III, IV, V, VI and so on. The problem with this system is that it is rather tricky to calculate, as anyone who has tried to work out MCCLXXI × DCIV will know. Arabic countries used a different system so al-Khwarizmi's calculations were rather more straightforward. However, just to complicate things a bit, there were two different sets of symbols in use in the Middle East:

First we have the 'West Arabic numerals': 0, 1, 2, 3, 4, 5, 6, 7, 8 and 9. Clearly you will recognise these as you use them every day and they are written in the correct order.

And then we have the 'East Arabic numerals': ٧ , ٩ , ٠ , ٥ , ٤ , ٨ , ۳ , ۱ , ۲ , and ٦. Now, these are not in the correct order.

*Problem 2*

* Solve the algebra problems below to work out the value of each of the symbols.

|  |  |  |
| --- | --- | --- |
| **٤ + 5 = 9** | **٤ + ٠ = ٤** | **٣ × ٦ = 18** |
| **6 × ٥ = 30** | **42 ÷ ٧ = 6** | **٨ ÷ ۲ = ٤** |
| **٣ × ٣ = ٩** | **٨ – 3 = ٥** | **۱ × ۱ = ۱** |