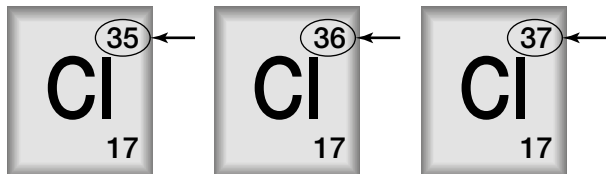


The structure of the atom

WORKIT!

These chlorine atoms have different mass numbers.



a How can this be explained? (2 marks, ★)

The mass number is different but the atomic number is the same. (1)

This can only mean one thing. They are isotopes of chlorine. (1)

b Why is the mass number of chlorine commonly stated as 35.5? (3 marks, ★★)

In nature there are three different naturally occurring isotopes of chlorine. (1)

The isotopes have different mass numbers, 35.5 is the weighted average. (1)

This does not mean that any of the isotopes have 35.5 protons and neutrons. (1)