Reading an Abacus

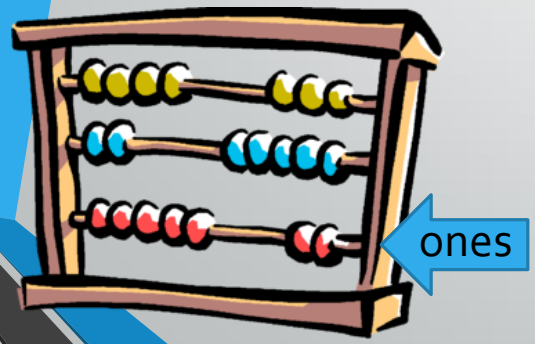
ID1050– Quantitative & Qualitative Reasoning

Positional Notation on an Abacus

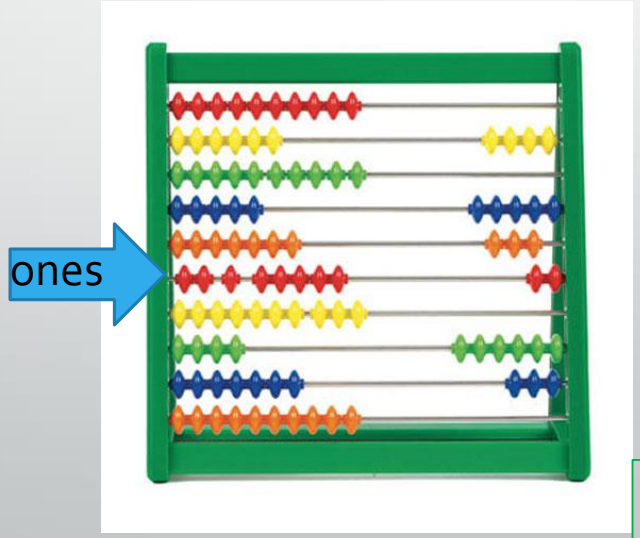
- An abacus is a physical representation of positional notation using beads on separate wires.
- The wires correspond to the columns in our positional notation, and each represents a power of ten. Each wire has nine beads that can slide along it.
- The number of beads to one side of the wire is read as the digit for that power of ten.
- Generally, one of the wires is designated as the 'ones' wire, or '10^0' wire
- This wire and the ones above it contain the integer part of the number
- The wires below the 'ones' wire contain the fractional part of the number

Examples of Reading an Abacus

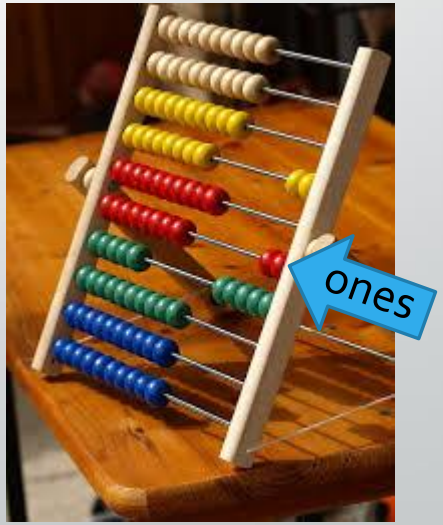
- The abacus can be used by an expert to do practically any numerical operation a standard calculator can do (including square and cube roots!), and at roughly the same speed.
- We will only be concerned with reading a number from an abacus.
- Examples: (I'll arbitrarily indicate a wire as the 'ones' wire)



352.



40532.063



202.5

Conclusion

- An abacus can be used to represent numbers
- Reading an abacus requires specification of a ‘ones’ wire
- The integer part is this wire and the ones above it
- The fractional part, if any, is expressed on the wires below it