The equations to be solved for positive integers are termed as diophantine equations, after a Greek mathematician Diophantus of Alexandria of third century B.C. Although he was interested in integer solutions, rationals made their room in the realm of diophantine problems. The Pell’s equation is a classical example of the diophantine equation; rather it is a misnomer for Euler (1707-1783) inadvertently referred this equation to an English mathematician John Pell (1610-1685) who had nothing to do with it. However, it has an extra-ordinary historical importance Weil in his book Number Theory An Approach through History, Birkhauser, Boston 1984 gives a very good account of it. Much earlier to English mathematicians it seems Indians had worked on Pell’s equation. Later developments in particular, Fermat’s (1601-1665) appearance into the scene heralded a new era in the field of number theory. His classic example namely the equation \( x^n + y^n = z^n \) with \( n \geq 3 \) for integer solutions have not only eluded the later generation mathematicians but remained unsettled for nearly three hundred and odd years. This itself is a testimony to the development of modern number theory. Interestingly the problem appears as a tenth in the list of David Hilbert’s famous twenty three enlisted problems of his nineteen hundred Paris Convention of the International Congress of Mathematicians. This again emphasizes the importance of diophantine equations as a research problem to the contemporary mathematicians. The thesis entitled “Some topics in Number Theory with special reference to Diophantine Equations” written in five chapters dwells upon some results related to this theme. Specific references to each chapter is provided followed by a general bibliography at the end. The contents of the chapter II and chapter IV are published. One in the Jr of Pure and Applied Mathematics INSA, New Delhi and the other one in the Jr Karnatak University.
Science which may be out any time from now. Remaining results from the rest of the chapters have been communicated.