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Recently, fractional calculus is an emerging field of research drawing attention from both theoretical and applied disciplines such as Applied Mathematics and Bioengineering. First, the left and right discrete fractional difference operators will be defined to obtain the summation by parts formula in discrete fractional calculus. Also these discrete operators will be used to define the simplest discrete fractional variation problem in the theory of Calculus of Variations. Last, discrete fractional Gompertzian model will be discussed for tumor growth. And its solution will be given with some illustrations of a real data. (Received August 17, 2009)