1086-11-1089 **Xinyun Zhu*** (zhu_x@utpb.edu), Department of Mathematics and Computer Sci, 4901 E University Blvd, University of Texas at Permian Basin, Odessa, TX 79762, **Aklilu Zeleke** (zeleke@msu.edu), Department of Statistics and Probability, A440 Wells Hall, Michigan State University, East Lansing, MI 48824, **Sivaram Narayan** (sivaram.narayan@cmich.edu), Department of Mathematics, Pearce Hall 218, Central Michigan University, Mount Pleasant, MI 48859, and **George Grossman** (gross1gw@cmich.edu), Department of Mathematics, Pearce Hall 217, Central Michigan University, Mount Pleasant, MI. *Recursive relations and combinatorial identities.*

In this paper we generate solutions of a real, doubly indexed, second order recurrence relation of the form

$$-a_{k,n} - ba_{k,n+1} + ca_{k,n+2} = \binom{n+k+2}{n+2} \tag{1}$$

with initial conditions, by two approaches, where b, c are real numbers, $c \neq 0$ and $\binom{n+k+2}{n+2}$ is binomial coefficient. We give the generating function for $a_{k,n},\ n, k \geq 0$. We also express term $a_{k,n}$ explicitly, as a finite, double sum, with binomial coefficients and terms of the form b^p/c^q, for some positive integers p, q. Equating two equivalent solutions, we note that an interesting sequence of combinatorial identities can be determined and give some examples. (Received September 18, 2012)