$$\sum_{j=0}^{dr-q} (-1)^j \binom{dr}{j} \left[ \begin{matrix} \binom{dr-j}{d} \\ r \end{matrix} \right] = (dr)!/[r!(d!)^r],$$

$$\sum_{j=0}^{dr-q-1} (-1)^j \binom{dr-1}{j} \left[ \begin{matrix} \binom{dr-j-1}{d} \\ r \end{matrix} \right] = d(dr)!(r-1)/2[r!(d!)^r], \text{ etc.}$$

Details of proofs, computations, and applications will appear elsewhere.

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# FIXED POINTS OF NONEXPANDING MAPS

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Communicated by F. Browder, July 12, 1967

**Introduction.** This paper is concerned with nonexpanding maps from the unit ball of a real Hilbert space into itself. Browder [1] has established that such maps always possess at least one fixed point. We shall develop a method, which resembles the simple iterative method, for approximating fixed points of such maps. In fact, we shall generate a sequence, $\{x_n\}$, by the recursive formula $x_{n+1} = k_{n+1}f(x_n)$ where $f$ is the map in question and $\{k_n\}$ is a sequence of real numbers. Our main result is Theorem 3 which states sufficient conditions on $k_n$ to insure the strong convergence of $x_n$ to a fixed point of $f$.

**Definitions and preliminary observations.** Let $H$ be a Hilbert space with inner product denoted by ( , ) and norm by $\| \ \|$. Let $B$ be the unit ball, $B = \{x \in H \mid \|x\| \leq 1\}$. A map $f$: $B \to B$ is nonexpanding if $\|f(x) - f(y)\| \leq \|x - y\|$ for all $x, y \in B$.

Assume that $f$: $B \to B$ is nonexpanding. It is not difficult to establish that the set $F$ of fixed points must be convex. Using the con-