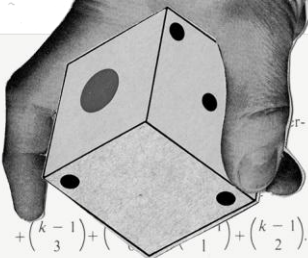


# THE MATHEMATICS EDUCATOR

Volume 22 Number 2



$$+ \binom{k-1}{3} + \binom{k-1}{2} + \binom{k-1}{1} + \binom{k-1}{0}$$

Using the binomial notation, where

(2)  $\binom{n}{r} + \binom{n}{r+1} = \binom{n+1}{r+1}$ .

we see that (1) is simplified to

(3)  $\binom{k}{2} + \binom{k}{1} + \binom{k}{0}$ .

Since

equation (3) is written as

(4)  $\binom{k}{2} + \binom{k}{1} + \binom{k}{0}$ .

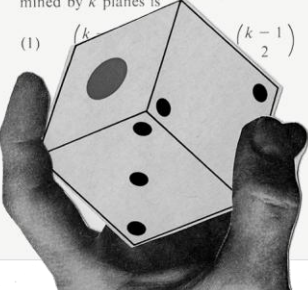
we see that the total number of regions determined by  $k$  planes is

TABLE 1

Total Number of Regions
$\binom{k}{2} + \binom{k}{1} + \binom{k}{0}$

Thus the total number of regions determined by  $k$  planes is

(1)  $\binom{k}{2} + \binom{k}{1} + \binom{k}{0}$



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