8

MMAG 21 (1947/8)

918 -920

1117 -1118

1286

295

460

498

460

498

COLLEGIATE ARTICLES

Papers Whose Reading Does Not Presuppose

[redacted]

by P. A. Piza

Let $_nD_c$ be integers defined by the following relations:

$$_nD_1 = 1. \qquad _nD_{c>n} = 0, \qquad _nD_{c<1} = 0. \qquad _nD_c = c(_{n-1}D_c + _{n-1}D_{c-1}).$$

A short table of D numbers is as follows:

[redacted]

					15120	5040	
1	254	5796	40824	126000	191520	141120	40320
1	510	18150	186480	834120	1905120	2328480	1451520
1	1022	55980	818520	5103000	16435440	29635[illegible]	[illegible]9600

bers have been found by the

[redacted]

bers?

[redacted]

1	$\binom{1001}{2}$ =	500,500
+1022	$\binom{1001}{3}$	170,333,163,000
+55980	$\binom{1001}{4}$	2,327,832,672,165

[redacted]

783,400,173,2...

241,424,243,424,241,924

...se B-coefficients

...sor Jekuthiel Ginsburg detec...

[redacted]

500,500

We have thus met the [redacted]

[redacted]

$$\sum_{\beta=1}^{x}\sum_{\gamma=1}^{\beta}\gamma^{t} = \Sigma^{2} x^{t} = \sum_{\alpha=1}^{t} {}_{t}K_{\alpha} \binom{x+t+2-\alpha}{t+2} ,$$

where the superscript 2 in Σ^2 means that there are to be two successive summati... of the t-th powers of the first x integers.

In general, for m successive summations of the powers, we will

$$(3).. \quad \Sigma^{m} x^{t} = \sum_{\alpha=1}^{t} {}_{t}K_{\alpha} \binom{x+t+m-\alpha}{t+m} ,$$

where m may be any positive or negative integer or zero.

When $m = 0$:

$$\Sigma^{0} x^{t} = x^{t} ,$$

and the superscript zero means that no summation nor subtraction is to

$$\Sigma^{-1} x^{t} = x^{t} - (x-1)^{t},$$

...script $m = -1$ means a negative summation or the difference bet...

Also

$$\Sigma^{-2} x^{t} = x^{t} - 2(x-1)^{t} + (x-2)^{t},$$

where the superscript -2 means the difference of the differences between x^t, $(x-1)^t$ and $(x-2)^t$.

$$\Sigma^{-3} x^{t} = x^{t} - 3(x-1)^{t} + 3(x-2)^{t} - (x-3)^{t}.$$

$$\Sigma^{-t} x^{t} = t!$$

Thus the successive sums and differences of the t-th powers of the int