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 cont

n	k	$p_k(n)$	n	k	$p_k(n)$
1	1	1	33	8	1090
2	1	1	34	8	1297
3	1	1	35	9	1549
4	2	2	36	9	1845
5	2	2	37	9	2194
6	2,~~3~~	3	38	9	2592
7	3	4	39	9	3060
8	3,~~4~~	5	40	10	3590
9	3	7	41	10	4242
10	4	9	42	10	5013
11	4	11	43	10	5888
12	4	15	44	10	6912
13	4,~~5~~	18	45	10	8070
14	4,~~5~~	23	46	10	9418
15	5	30	47	11	11004
16	5	37	48	11	12866
17	5	47	49	11	15021
18	6	58	50	11	17475
19	6	71	51	11	20298
20	6	90	52	11	23501
21	6	110	53	11	27169
22	6	136	54	12	31570
23	7	164	55	12	36578
24	7	201	56	12	42333
25	7	248	57	12	48849
26	7	300	58	12	56297
27	7	364	59	12	64707
28	7	436	60	13	74331
29	8	525	61	13	85711
30	8	638	62	13	98609
31	8	764	63	13	113287
32	8	919			

AN ASYMPTOTIC FORMULA FOR $p_k(n)$

BY

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1. The object of this note is to provide an elementary proof for the following theorem which was first proved by Erdos and Lehner,* and recently by Hansraj Gupta† by an independent method.

THEOREM.

$$p_k(n) \sim \frac{1}{k!}\binom{n-1}{k-1},$$

for all values of k such that $k = o(n^{\frac{1}{3}})$.

2. Consider‡ *n unit* digits as constituting the number n, and let there be k compartments. The number of ways, hereafter referred to as *complexions*, in which the n *units* can be distributed among the k compartments, each compartment containing at least one *unit*, is equal to the number of ways of collecting $n-k$ objects into k compartments, any particular compartment being used any number of times (from 0 to $n-k$); and is therefore equal to

$$_kH_{n-k} = \binom{n-1}{k-1}. \qquad (1)$$

Since any one partition of n into k *different* parts will generate $k!$ complexions, and a partition in which all the summands are not different will generate less than $k!$ complexions, we have

* *Duke Math. Jour.* 8 (1941), 335-45.

† *Pro. Ind. Ac. Sc.* 16 (1942), 101-2.

‡ This method was suggested to me by Dr. D. S. Kothari.