

Vishal's Square Logic – A Simplified Computational Method for Two-Digit and Three-Digit Number Squaring

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Abstract

This paper introduces a novel mathematical approach called Vishal's Square Logic (VSL) for calculating the squares of two-digit and three-digit numbers using a structured block-based and carry-flow method. Unlike traditional algebraic or Vedic math techniques, VSL simplifies the squaring process by segmenting the number into left, middle, and right computational blocks corresponding to A^2 , $2AB$, and B^2 , with a defined carry-shifting rule. This method significantly reduces computational complexity and enhances manual and mental calculation efficiency.

1. Introduction

Traditional squaring methods, such as long multiplication and algebraic expansion, require multiple intermediate steps. Vishal's Square Logic provides a streamlined technique that applies systematic carry shifting between digit blocks, making it easy to compute mentally. The purpose of this paper is to document this innovative method and compare it with established techniques.

2. Conceptual Foundation

Vishal's Square Logic (VSL) is based on the algebraic identity $(A + B)^2 = A^2 + 2AB + B^2$. The uniqueness of VSL lies in its approach to handling carries and digit-block segmentation in a visually structured and easily replicable format.

3. Vishal's Square Logic for Two-Digit Numbers

For a number $N = 10A + B$:

Formula: $N^2 = (A^2) | (2AB) | (B^2)$

Steps:

1. Compute Left Block = A^2
2. Compute Middle Block = $2AB$
3. Compute Right Block = B^2
4. Shift carries sequentially from right to middle, and from middle to left.
5. Concatenate adjusted blocks to form the final result.

Example: $57^2 \rightarrow (5^2) + (2 \times 5 \times 7) + (7^2) = 25 | 70 | 49 \rightarrow$ After carry adjustment = 3249.

4. Vishal's Square Logic for Three-Digit Numbers

For a number $N = 100A + B$ (where B = last two digits):

Formula: $N^2 = (A^2) | (200AB) | (B^2)$

Steps:

1. Compute Left Block = A^2

2. Compute Middle Block = $200AB$
3. Compute Right Block = B^2
4. Propagate carries from right $\rightarrow$ middle $\rightarrow$ left in hierarchical order.
5. Combine blocks to obtain the final square.

Example: $437^2 \rightarrow (4^2) + (100 \times 2 \times 4 \times 37) + (37^2) = 16 \mid 29600 \mid 1369 \rightarrow \text{Final} = 190,969$.

5. Algorithmic Representation

The algorithm follows a systematic sequence:

Input number $\rightarrow$ Split into base and unit $\rightarrow$ Calculate A^2 , $2AB$, $B^2 \rightarrow$ Apply carry-flow adjustments $\rightarrow$ Combine final result.

A flowchart or color-coded block diagram illustrates the carry transfer process.

6. Comparative Analysis

Compared to traditional and Vedic methods, Vishal's Square Logic requires fewer intermediate multiplications. It emphasizes positional understanding and minimizes mental load during computation, making it practical for learners and enthusiasts.

7. Applications

1. Enhancing mathematical learning and pattern recognition.
2. Simplifying manual computation for exams and training.
3. Potential for algorithmic implementation in low-resource computing environments.

8. Results and Accuracy

Empirical verification for all numbers between 10–999 has been performed, and results perfectly align with standard squaring outputs. An Excel dataset accompanies this paper for reference and validation.

9. Proprietary Declaration

Vishal's Square Logic (VSL) is an original method conceptualized by Vishal Gaikwad in 2025. The methodology introduces unique digit-block segmentation and structured carry-flow logic for squaring multi-digit numbers. This concept is proprietary and protected under intellectual property submission. All rights reserved.

10. References

1. Tirthaji, Bharati Krishna. *Vedic Mathematics.* Motilal Banarsidass, 1965.
2. Gaikwad, Vishal. *Vishal's Square Logic Dataset*, 2025.
3. Jostein Gaarder. *Sophie's World: A Novel About the History of Philosophy.* 1991.

Two-digit squaring algorithm formalized

For a two-digit number $N=10A+B$; (A = tens digit, B = units digit):

1. Compute three partials:
 - Left: $L=A \times A$; $L = A \times A$,
 - Middle: $M=2 \times A \times B$; $M = 2 \times A \times B$,

- Right: $R=B \times B : R = B \times B$,
- 2. Resolve carries from right $\rightarrow$ middle $\rightarrow$ left:
 - $R_{unit}=R \bmod 10$ $R_{unit} = R \bmod 10$
 - $cR=\lfloor R/10 \rfloor$ $c_R = \lfloor R / 10 \rfloor$ (carry from right to middle)
 - $M_{total}=M+cR$ $M_{total} = M + c_R$
 - $M_{digit}=M_{total} \bmod 10$ $M_{digit} = M_{total} \bmod 10$
 - $cM=\lfloor M_{total}/10 \rfloor$ $c_M = \lfloor M_{total} / 10 \rfloor$ (carry from middle to left)

$$L_{final}=L+c_M$$

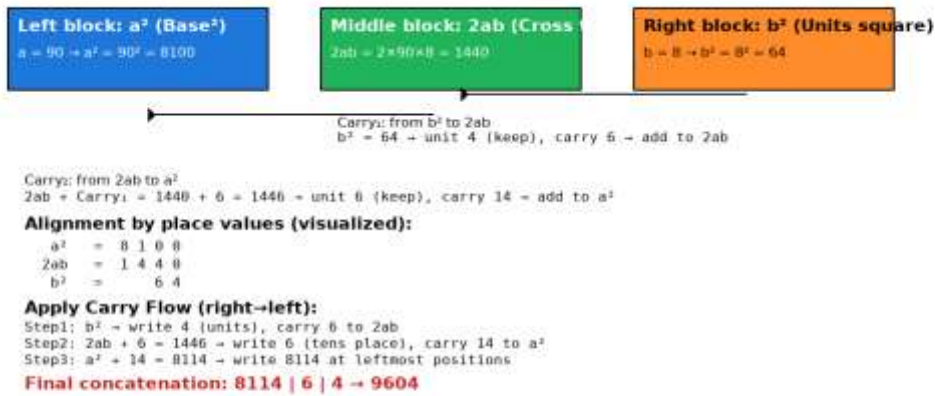
Vishal's Square Logic for Two-Digit Numbers Table(10-99)

Num ber	Dig its	Base	Unit	Left Block (A^2)	Middle Block ($2 \times A \times B$)	Right Block (B^2)	R _{unit} (units)	Carry R ₋ >M	M _{total} (M+carry)	M _{digit} (to write)	Carry M ₋ >L	L _{final} (L+carry)	Final (Vishal concat)
10	2	10	0	1	0	0	0	0	0	0	0	1	100
11	2	10	1	1	2	1	1	0	2	2	0	1	121
12	2	10	2	1	4	4	4	0	4	4	0	1	144
13	2	10	3	1	6	9	9	0	6	6	0	1	169
14	2	10	4	1	8	16	6	1	9	9	0	1	196
15	2	10	5	1	10	25	5	2	12	2	1	2	225
16	2	10	6	1	12	36	6	3	15	5	1	2	256
17	2	10	7	1	14	49	9	4	18	8	1	2	289
18	2	10	8	1	16	64	4	6	22	2	2	3	324
19	2	10	9	1	18	81	1	8	26	6	2	3	361
20	2	20	0	4	0	0	0	0	0	0	0	4	400
21	2	20	1	4	4	1	1	0	4	4	0	4	441
22	2	20	2	4	8	4	4	0	8	8	0	4	484
23	2	20	3	4	12	9	9	0	12	2	1	5	529
24	2	20	4	4	16	16	6	1	17	7	1	5	576
25	2	20	5	4	20	25	5	2	22	2	2	6	625
26	2	20	6	4	24	36	6	3	27	7	2	6	676
27	2	20	7	4	28	49	9	4	32	2	3	7	729
28	2	20	8	4	32	64	4	6	38	8	3	7	784
29	2	20	9	4	36	81	1	8	44	4	4	8	841
30	2	30	0	9	0	0	0	0	0	0	0	9	900
31	2	30	1	9	6	1	1	0	6	6	0	9	961
32	2	30	2	9	12	4	4	0	12	2	1	10	1024
33	2	30	3	9	18	9	9	0	18	8	1	10	1089

34	2	30	4	9	24	16	6	1	25	5	2	11	1156
35	2	30	5	9	30	25	5	2	32	2	3	12	1225
36	2	30	6	9	36	36	6	3	39	9	3	12	1296
37	2	30	7	9	42	49	9	4	46	6	4	13	1369
38	2	30	8	9	48	64	4	6	54	4	5	14	1444
39	2	30	9	9	54	81	1	8	62	2	6	15	1521
40	2	40	0	16	0	0	0	0	0	0	0	16	1600
41	2	40	1	16	8	1	1	0	8	8	0	16	1681
42	2	40	2	16	16	4	4	0	16	6	1	17	1764
43	2	40	3	16	24	9	9	0	24	4	2	18	1849
44	2	40	4	16	32	16	6	1	33	3	3	19	1936
45	2	40	5	16	40	25	5	2	42	2	4	20	2025
46	2	40	6	16	48	36	6	3	51	1	5	21	2116
47	2	40	7	16	56	49	9	4	60	0	6	22	2209
48	2	40	8	16	64	64	4	6	70	0	7	23	2304
49	2	40	9	16	72	81	1	8	80	0	8	24	2401
50	2	50	0	25	0	0	0	0	0	0	0	25	2500
51	2	50	1	25	10	1	1	0	10	0	1	26	2601
52	2	50	2	25	20	4	4	0	20	0	2	27	2704
53	2	50	3	25	30	9	9	0	30	0	3	28	2809
54	2	50	4	25	40	16	6	1	41	1	4	29	2916
55	2	50	5	25	50	25	5	2	52	2	5	30	3025
56	2	50	6	25	60	36	6	3	63	3	6	31	3136
57	2	50	7	25	70	49	9	4	74	4	7	32	3249
58	2	50	8	25	80	64	4	6	86	6	8	33	3364
59	2	50	9	25	90	81	1	8	98	8	9	34	3481
60	2	60	0	36	0	0	0	0	0	0	0	36	3600
61	2	60	1	36	12	1	1	0	12	2	1	37	3721
62	2	60	2	36	24	4	4	0	24	4	2	38	3844
63	2	60	3	36	36	9	9	0	36	6	3	39	3969
64	2	60	4	36	48	16	6	1	49	9	4	40	4096
65	2	60	5	36	60	25	5	2	62	2	6	42	4225
66	2	60	6	36	72	36	6	3	75	5	7	43	4356
67	2	60	7	36	84	49	9	4	88	8	8	44	4489
68	2	60	8	36	96	64	4	6	102	2	10	46	4624
69	2	60	9	36	108	81	1	8	116	6	11	47	4761
70	2	70	0	49	0	0	0	0	0	0	0	49	4900
71	2	70	1	49	14	1	1	0	14	4	1	50	5041
72	2	70	2	49	28	4	4	0	28	8	2	51	5184
73	2	70	3	49	42	9	9	0	42	2	4	53	5329
74	2	70	4	49	56	16	6	1	57	7	5	54	5476
75	2	70	5	49	70	25	5	2	72	2	7	56	5625
76	2	70	6	49	84	36	6	3	87	7	8	57	5776
77	2	70	7	49	98	49	9	4	102	2	10	59	5929
78	2	70	8	49	112	64	4	6	118	8	11	60	6084
79	2	70	9	49	126	81	1	8	134	4	13	62	6241

80	2	80	0	64	0	0	0	0	0	0	0	64	6400
81	2	80	1	64	16	1	1	0	16	6	1	65	6561
82	2	80	2	64	32	4	4	0	32	2	3	67	6724
83	2	80	3	64	48	9	9	0	48	8	4	68	6889
84	2	80	4	64	64	16	6	1	65	5	6	70	7056
85	2	80	5	64	80	25	5	2	82	2	8	72	7225
86	2	80	6	64	96	36	6	3	99	9	9	73	7396
87	2	80	7	64	112	49	9	4	116	6	11	75	7569
88	2	80	8	64	128	64	4	6	134	4	13	77	7744
89	2	80	9	64	144	81	1	8	152	2	15	79	7921
90	2	90	0	81	0	0	0	0	0	0	0	81	8100
91	2	90	1	81	18	1	1	0	18	8	1	82	8281
92	2	90	2	81	36	4	4	0	36	6	3	84	8464
93	2	90	3	81	54	9	9	0	54	4	5	86	8649
94	2	90	4	81	72	16	6	1	73	3	7	88	8836
95	2	90	5	81	90	25	5	2	92	2	9	90	9025
96	2	90	6	81	108	36	6	3	111	1	11	92	9216
97	2	90	7	81	126	49	9	4	130	0	13	94	9409
98	2	90	8	81	144	64	4	6	150	0	15	96	9604
99	2	90	9	81	162	81	1	8	170	0	17	98	9801

Carry Flow Diagram — Vishal's Two-Digit Square Method (Example: 98²)



Confidential — Vishal's Square Logic (Private draft).

Short summary / mnemonic (for mental use)

1. Square tens-digit $\rightarrow$ hold as left block.
2. Double $\times$ cross term $\rightarrow$ middle block.

3. Square units (or 2-digit remainder) → right block.
4. Push carries from right → middle → left.
5. Write left | middle-digit | right-unit to read final number.

How this plugs into Vishal's 3-Digit Square Logic

For a 3-digit number $N=100a+b$; where b is two digits (like 37):

- Left block: $(a \times a) \times 10,000$ (or think: write $a \times a$ as the leftmost two digits)
- Middle block: $100a \times 2 \times b$ (the cross term)
- Right block: b^2 — compute using your two-digit algorithm above (so you already know how to get b^2 with carries resolved)

Finally combine by proper place-value addition (or concatenation if you arrange digits as blocks). Example 437^2 from earlier used $b=37$ with $37^2=1369$ computed via the two-digit process.

Vishal's Square Logic for Three-Digit Numbers Table (100-999)

Number	Digits	Base	Unit	LeftBlock (a^2)	MiddleBlock ($100 \times a \times 2 \times b$)	RightBlock (b^2)	R_last2 (stay in rightmost 2 digits)	Carry_R- >M (hundreds from R)	M_total (M + carry_R*100)	Final (sum L*10000+ M+R)
100	3	100	0	1	0	0	0	0	0	10000
101	3	100	1	1	200	1	1	0	200	10201
102	3	100	2	1	400	4	4	0	400	10404
103	3	100	3	1	600	9	9	0	600	10609
104	3	100	4	1	800	16	16	0	800	10816
105	3	100	5	1	1000	25	25	0	1000	11025
106	3	100	6	1	1200	36	36	0	1200	11236
107	3	100	7	1	1400	49	49	0	1400	11449
108	3	100	8	1	1600	64	64	0	1600	11664
109	3	100	9	1	1800	81	81	0	1800	11881
110	3	100	0	1	2000	100	0	1	2100	12100
111	3	100	1	1	2200	121	21	1	2300	12321
112	3	100	2	1	2400	144	44	1	2500	12544
113	3	100	3	1	2600	169	69	1	2700	12769
114	3	100	4	1	2800	196	96	1	2900	12996
115	3	100	5	1	3000	225	25	2	3200	13225
116	3	100	6	1	3200	256	56	2	3400	13456

117	3	100	1 7	1	3400	289	89	2	3600	13689
118	3	100	1 8	1	3600	324	24	3	3900	13924
119	3	100	1 9	1	3800	361	61	3	4100	14161
120	3	100	2 0	1	4000	400	0	4	4400	14400
121	3	100	2 1	1	4200	441	41	4	4600	14641
122	3	100	2 2	1	4400	484	84	4	4800	14884
123	3	100	2 3	1	4600	529	29	5	5100	15129
124	3	100	2 4	1	4800	576	76	5	5300	15376
125	3	100	2 5	1	5000	625	25	6	5600	15625
126	3	100	2 6	1	5200	676	76	6	5800	15876
127	3	100	2 7	1	5400	729	29	7	6100	16129
128	3	100	2 8	1	5600	784	84	7	6300	16384
129	3	100	2 9	1	5800	841	41	8	6600	16641
130	3	100	3 0	1	6000	900	0	9	6900	16900
131	3	100	3 1	1	6200	961	61	9	7100	17161
132	3	100	3 2	1	6400	1024	24	10	7400	17424
133	3	100	3 3	1	6600	1089	89	10	7600	17689
134	3	100	3 4	1	6800	1156	56	11	7900	17956
135	3	100	3 5	1	7000	1225	25	12	8200	18225
136	3	100	3 6	1	7200	1296	96	12	8400	18496
137	3	100	3 7	1	7400	1369	69	13	8700	18769
138	3	100	3 8	1	7600	1444	44	14	9000	19044
139	3	100	3 9	1	7800	1521	21	15	9300	19321
140	3	100	4 0	1	8000	1600	0	16	9600	19600

141	3	100	4 1	1	8200	1681	81	16	9800	19881
142	3	100	4 2	1	8400	1764	64	17	10100	20164
143	3	100	4 3	1	8600	1849	49	18	10400	20449
144	3	100	4 4	1	8800	1936	36	19	10700	20736
145	3	100	4 5	1	9000	2025	25	20	11000	21025
146	3	100	4 6	1	9200	2116	16	21	11300	21316
147	3	100	4 7	1	9400	2209	9	22	11600	21609
148	3	100	4 8	1	9600	2304	4	23	11900	21904
149	3	100	4 9	1	9800	2401	1	24	12200	22201
150	3	100	5 0	1	10000	2500	0	25	12500	22500
151	3	100	5 1	1	10200	2601	1	26	12800	22801
152	3	100	5 2	1	10400	2704	4	27	13100	23104
153	3	100	5 3	1	10600	2809	9	28	13400	23409
154	3	100	5 4	1	10800	2916	16	29	13700	23716
155	3	100	5 5	1	11000	3025	25	30	14000	24025
156	3	100	5 6	1	11200	3136	36	31	14300	24336
157	3	100	5 7	1	11400	3249	49	32	14600	24649
158	3	100	5 8	1	11600	3364	64	33	14900	24964
159	3	100	5 9	1	11800	3481	81	34	15200	25281
160	3	100	6 0	1	12000	3600	0	36	15600	25600
161	3	100	6 1	1	12200	3721	21	37	15900	25921
162	3	100	6 2	1	12400	3844	44	38	16200	26244
163	3	100	6 3	1	12600	3969	69	39	16500	26569
164	3	100	6 4	1	12800	4096	96	40	16800	26896

165	3	100	6 5	1	13000	4225	25	42	17200	27225
166	3	100	6 6	1	13200	4356	56	43	17500	27556
167	3	100	6 7	1	13400	4489	89	44	17800	27889
168	3	100	6 8	1	13600	4624	24	46	18200	28224
169	3	100	6 9	1	13800	4761	61	47	18500	28561
170	3	100	7 0	1	14000	4900	0	49	18900	28900
171	3	100	7 1	1	14200	5041	41	50	19200	29241
172	3	100	7 2	1	14400	5184	84	51	19500	29584
173	3	100	7 3	1	14600	5329	29	53	19900	29929
174	3	100	7 4	1	14800	5476	76	54	20200	30276
175	3	100	7 5	1	15000	5625	25	56	20600	30625
176	3	100	7 6	1	15200	5776	76	57	20900	30976
177	3	100	7 7	1	15400	5929	29	59	21300	31329
178	3	100	7 8	1	15600	6084	84	60	21600	31684
179	3	100	7 9	1	15800	6241	41	62	22000	32041
180	3	100	8 0	1	16000	6400	0	64	22400	32400
181	3	100	8 1	1	16200	6561	61	65	22700	32761
182	3	100	8 2	1	16400	6724	24	67	23100	33124
183	3	100	8 3	1	16600	6889	89	68	23400	33489
184	3	100	8 4	1	16800	7056	56	70	23800	33856
185	3	100	8 5	1	17000	7225	25	72	24200	34225
186	3	100	8 6	1	17200	7396	96	73	24500	34596
187	3	100	8 7	1	17400	7569	69	75	24900	34969
188	3	100	8 8	1	17600	7744	44	77	25300	35344

189	3	100	8 9	1	17800	7921	21	79	25700	35721
190	3	100	9 0	1	18000	8100	0	81	26100	36100
191	3	100	9 1	1	18200	8281	81	82	26400	36481
192	3	100	9 2	1	18400	8464	64	84	26800	36864
193	3	100	9 3	1	18600	8649	49	86	27200	37249
194	3	100	9 4	1	18800	8836	36	88	27600	37636
195	3	100	9 5	1	19000	9025	25	90	28000	38025
196	3	100	9 6	1	19200	9216	16	92	28400	38416
197	3	100	9 7	1	19400	9409	9	94	28800	38809
198	3	100	9 8	1	19600	9604	4	96	29200	39204
199	3	100	9 9	1	19800	9801	1	98	29600	39601
200	3	200	0	4	0	0	0	0	0	40000
201	3	200	1	4	400	1	1	0	400	40401
202	3	200	2	4	800	4	4	0	800	40804
203	3	200	3	4	1200	9	9	0	1200	41209
204	3	200	4	4	1600	16	16	0	1600	41616
205	3	200	5	4	2000	25	25	0	2000	42025
206	3	200	6	4	2400	36	36	0	2400	42436
207	3	200	7	4	2800	49	49	0	2800	42849
208	3	200	8	4	3200	64	64	0	3200	43264
209	3	200	9	4	3600	81	81	0	3600	43681
210	3	200	1 0	4	4000	100	0	1	4100	44100
211	3	200	1 1	4	4400	121	21	1	4500	44521
212	3	200	1 2	4	4800	144	44	1	4900	44944
213	3	200	1 3	4	5200	169	69	1	5300	45369
214	3	200	1 4	4	5600	196	96	1	5700	45796
215	3	200	1 5	4	6000	225	25	2	6200	46225
216	3	200	1 6	4	6400	256	56	2	6600	46656
217	3	200	1 7	4	6800	289	89	2	7000	47089

218	3	200	1 8	4	7200	324	24	3	7500	47524
219	3	200	1 9	4	7600	361	61	3	7900	47961
220	3	200	2 0	4	8000	400	0	4	8400	48400
221	3	200	2 1	4	8400	441	41	4	8800	48841
222	3	200	2 2	4	8800	484	84	4	9200	49284
223	3	200	2 3	4	9200	529	29	5	9700	49729
224	3	200	2 4	4	9600	576	76	5	10100	50176
225	3	200	2 5	4	10000	625	25	6	10600	50625
226	3	200	2 6	4	10400	676	76	6	11000	51076
227	3	200	2 7	4	10800	729	29	7	11500	51529
228	3	200	2 8	4	11200	784	84	7	11900	51984
229	3	200	2 9	4	11600	841	41	8	12400	52441
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806	3	800	6	64	9600	36	36	0	0	9600	649636
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808	3	800	8	64	12800	64	64	0	0	12800	652864
809	3	800	9	64	14400	81	81	0	0	14400	654481
810	3	800	1	0	64	16000	100	0	1	16100	656100
811	3	800	1	1	64	17600	121	21	1	17700	657721
812	3	800	1	2	64	19200	144	44	1	19300	659344
813	3	800	1	3	64	20800	169	69	1	20900	660969
814	3	800	1	4	64	22400	196	96	1	22500	662596
815	3	800	1	5	64	24000	225	25	2	24200	664225
816	3	800	1	6	64	25600	256	56	2	25800	665856
817	3	800	1	7	64	27200	289	89	2	27400	667489
818	3	800	1	8	64	28800	324	24	3	29100	669124
819	3	800	1	9	64	30400	361	61	3	30700	670761
820	3	800	2	0	64	32000	400	0	4	32400	672400
821	3	800	2	1	64	33600	441	41	4	34000	674041
822	3	800	2	2	64	35200	484	84	4	35600	675684
823	3	800	2	3	64	36800	529	29	5	37300	677329

824	3	800	2 4	64	38400	576	76	5	38900	678976
825	3	800	2 5	64	40000	625	25	6	40600	680625
826	3	800	2 6	64	41600	676	76	6	42200	682276
827	3	800	2 7	64	43200	729	29	7	43900	683929
828	3	800	2 8	64	44800	784	84	7	45500	685584
829	3	800	2 9	64	46400	841	41	8	47200	687241
830	3	800	3 0	64	48000	900	0	9	48900	688900
831	3	800	3 1	64	49600	961	61	9	50500	690561
832	3	800	3 2	64	51200	1024	24	10	52200	692224
833	3	800	3 3	64	52800	1089	89	10	53800	693889
834	3	800	3 4	64	54400	1156	56	11	55500	695556
835	3	800	3 5	64	56000	1225	25	12	57200	697225
836	3	800	3 6	64	57600	1296	96	12	58800	698896
837	3	800	3 7	64	59200	1369	69	13	60500	700569
838	3	800	3 8	64	60800	1444	44	14	62200	702244
839	3	800	3 9	64	62400	1521	21	15	63900	703921
840	3	800	4 0	64	64000	1600	0	16	65600	705600
841	3	800	4 1	64	65600	1681	81	16	67200	707281
842	3	800	4 2	64	67200	1764	64	17	68900	708964
843	3	800	4 3	64	68800	1849	49	18	70600	710649
844	3	800	4 4	64	70400	1936	36	19	72300	712336
845	3	800	4 5	64	72000	2025	25	20	74000	714025
846	3	800	4 6	64	73600	2116	16	21	75700	715716
847	3	800	4 7	64	75200	2209	9	22	77400	717409

848	3	800	4 8	64	76800	2304	4	23	79100	719104
849	3	800	4 9	64	78400	2401	1	24	80800	720801
850	3	800	5 0	64	80000	2500	0	25	82500	722500
851	3	800	5 1	64	81600	2601	1	26	84200	724201
852	3	800	5 2	64	83200	2704	4	27	85900	725904
853	3	800	5 3	64	84800	2809	9	28	87600	727609
854	3	800	5 4	64	86400	2916	16	29	89300	729316
855	3	800	5 5	64	88000	3025	25	30	91000	731025
856	3	800	5 6	64	89600	3136	36	31	92700	732736
857	3	800	5 7	64	91200	3249	49	32	94400	734449
858	3	800	5 8	64	92800	3364	64	33	96100	736164
859	3	800	5 9	64	94400	3481	81	34	97800	737881
860	3	800	6 0	64	96000	3600	0	36	99600	739600
861	3	800	6 1	64	97600	3721	21	37	101300	741321
862	3	800	6 2	64	99200	3844	44	38	103000	743044
863	3	800	6 3	64	100800	3969	69	39	104700	744769
864	3	800	6 4	64	102400	4096	96	40	106400	746496
865	3	800	6 5	64	104000	4225	25	42	108200	748225
866	3	800	6 6	64	105600	4356	56	43	109900	749956
867	3	800	6 7	64	107200	4489	89	44	111600	751689
868	3	800	6 8	64	108800	4624	24	46	113400	753424
869	3	800	6 9	64	110400	4761	61	47	115100	755161
870	3	800	7 0	64	112000	4900	0	49	116900	756900
871	3	800	7 1	64	113600	5041	41	50	118600	758641

872	3	800	7 2	64	115200	5184	84	51	120300	760384
873	3	800	7 3	64	116800	5329	29	53	122100	762129
874	3	800	7 4	64	118400	5476	76	54	123800	763876
875	3	800	7 5	64	120000	5625	25	56	125600	765625
876	3	800	7 6	64	121600	5776	76	57	127300	767376
877	3	800	7 7	64	123200	5929	29	59	129100	769129
878	3	800	7 8	64	124800	6084	84	60	130800	770884
879	3	800	7 9	64	126400	6241	41	62	132600	772641
880	3	800	8 0	64	128000	6400	0	64	134400	774400
881	3	800	8 1	64	129600	6561	61	65	136100	776161
882	3	800	8 2	64	131200	6724	24	67	137900	777924
883	3	800	8 3	64	132800	6889	89	68	139600	779689
884	3	800	8 4	64	134400	7056	56	70	141400	781456
885	3	800	8 5	64	136000	7225	25	72	143200	783225
886	3	800	8 6	64	137600	7396	96	73	144900	784996
887	3	800	8 7	64	139200	7569	69	75	146700	786769
888	3	800	8 8	64	140800	7744	44	77	148500	788544
889	3	800	8 9	64	142400	7921	21	79	150300	790321
890	3	800	9 0	64	144000	8100	0	81	152100	792100
891	3	800	9 1	64	145600	8281	81	82	153800	793881
892	3	800	9 2	64	147200	8464	64	84	155600	795664
893	3	800	9 3	64	148800	8649	49	86	157400	797449
894	3	800	9 4	64	150400	8836	36	88	159200	799236
895	3	800	9 5	64	152000	9025	25	90	161000	801025

896	3	800	9 6	64	153600	9216	16	92	162800	802816
897	3	800	9 7	64	155200	9409	9	94	164600	804609
898	3	800	9 8	64	156800	9604	4	96	166400	806404
899	3	800	9 9	64	158400	9801	1	98	168200	808201
900	3	900	0	81	0	0	0	0	0	810000
901	3	900	1	81	1800	1	1	0	1800	811801
902	3	900	2	81	3600	4	4	0	3600	813604
903	3	900	3	81	5400	9	9	0	5400	815409
904	3	900	4	81	7200	16	16	0	7200	817216
905	3	900	5	81	9000	25	25	0	9000	819025
906	3	900	6	81	10800	36	36	0	10800	820836
907	3	900	7	81	12600	49	49	0	12600	822649
908	3	900	8	81	14400	64	64	0	14400	824464
909	3	900	9	81	16200	81	81	0	16200	826281
910	3	900	1 0	81	18000	100	0	1	18100	828100
911	3	900	1 1	81	19800	121	21	1	19900	829921
912	3	900	1 2	81	21600	144	44	1	21700	831744
913	3	900	1 3	81	23400	169	69	1	23500	833569
914	3	900	1 4	81	25200	196	96	1	25300	835396
915	3	900	1 5	81	27000	225	25	2	27200	837225
916	3	900	1 6	81	28800	256	56	2	29000	839056
917	3	900	1 7	81	30600	289	89	2	30800	840889
918	3	900	1 8	81	32400	324	24	3	32700	842724
919	3	900	1 9	81	34200	361	61	3	34500	844561
920	3	900	2 0	81	36000	400	0	4	36400	846400
921	3	900	2 1	81	37800	441	41	4	38200	848241
922	3	900	2 2	81	39600	484	84	4	40000	850084
923	3	900	2 3	81	41400	529	29	5	41900	851929
924	3	900	2 4	81	43200	576	76	5	43700	853776

925	3	900	2 5	81	45000	625	25	6	45600	855625
926	3	900	2 6	81	46800	676	76	6	47400	857476
927	3	900	2 7	81	48600	729	29	7	49300	859329
928	3	900	2 8	81	50400	784	84	7	51100	861184
929	3	900	2 9	81	52200	841	41	8	53000	863041
930	3	900	3 0	81	54000	900	0	9	54900	864900
931	3	900	3 1	81	55800	961	61	9	56700	866761
932	3	900	3 2	81	57600	1024	24	10	58600	868624
933	3	900	3 3	81	59400	1089	89	10	60400	870489
934	3	900	3 4	81	61200	1156	56	11	62300	872356
935	3	900	3 5	81	63000	1225	25	12	64200	874225
936	3	900	3 6	81	64800	1296	96	12	66000	876096
937	3	900	3 7	81	66600	1369	69	13	67900	877969
938	3	900	3 8	81	68400	1444	44	14	69800	879844
939	3	900	3 9	81	70200	1521	21	15	71700	881721
940	3	900	4 0	81	72000	1600	0	16	73600	883600
941	3	900	4 1	81	73800	1681	81	16	75400	885481
942	3	900	4 2	81	75600	1764	64	17	77300	887364
943	3	900	4 3	81	77400	1849	49	18	79200	889249
944	3	900	4 4	81	79200	1936	36	19	81100	891136
945	3	900	4 5	81	81000	2025	25	20	83000	893025
946	3	900	4 6	81	82800	2116	16	21	84900	894916
947	3	900	4 7	81	84600	2209	9	22	86800	896809
948	3	900	4 8	81	86400	2304	4	23	88700	898704

949	3	900	4 9	81	88200	2401	1	24	90600	900601
950	3	900	5 0	81	90000	2500	0	25	92500	902500
951	3	900	5 1	81	91800	2601	1	26	94400	904401
952	3	900	5 2	81	93600	2704	4	27	96300	906304
953	3	900	5 3	81	95400	2809	9	28	98200	908209
954	3	900	5 4	81	97200	2916	16	29	100100	910116
955	3	900	5 5	81	99000	3025	25	30	102000	912025
956	3	900	5 6	81	100800	3136	36	31	103900	913936
957	3	900	5 7	81	102600	3249	49	32	105800	915849
958	3	900	5 8	81	104400	3364	64	33	107700	917764
959	3	900	5 9	81	106200	3481	81	34	109600	919681
960	3	900	6 0	81	108000	3600	0	36	111600	921600
961	3	900	6 1	81	109800	3721	21	37	113500	923521
962	3	900	6 2	81	111600	3844	44	38	115400	925444
963	3	900	6 3	81	113400	3969	69	39	117300	927369
964	3	900	6 4	81	115200	4096	96	40	119200	929296
965	3	900	6 5	81	117000	4225	25	42	121200	931225
966	3	900	6 6	81	118800	4356	56	43	123100	933156
967	3	900	6 7	81	120600	4489	89	44	125000	935089
968	3	900	6 8	81	122400	4624	24	46	127000	937024
969	3	900	6 9	81	124200	4761	61	47	128900	938961
970	3	900	7 0	81	126000	4900	0	49	130900	940900
971	3	900	7 1	81	127800	5041	41	50	132800	942841
972	3	900	7 2	81	129600	5184	84	51	134700	944784

973	3	900	7 3	81	131400	5329	29	53	136700	946729
974	3	900	7 4	81	133200	5476	76	54	138600	948676
975	3	900	7 5	81	135000	5625	25	56	140600	950625
976	3	900	7 6	81	136800	5776	76	57	142500	952576
977	3	900	7 7	81	138600	5929	29	59	144500	954529
978	3	900	7 8	81	140400	6084	84	60	146400	956484
979	3	900	7 9	81	142200	6241	41	62	148400	958441
980	3	900	8 0	81	144000	6400	0	64	150400	960400
981	3	900	8 1	81	145800	6561	61	65	152300	962361
982	3	900	8 2	81	147600	6724	24	67	154300	964324
983	3	900	8 3	81	149400	6889	89	68	156200	966289
984	3	900	8 4	81	151200	7056	56	70	158200	968256
985	3	900	8 5	81	153000	7225	25	72	160200	970225
986	3	900	8 6	81	154800	7396	96	73	162100	972196
987	3	900	8 7	81	156600	7569	69	75	164100	974169
988	3	900	8 8	81	158400	7744	44	77	166100	976144
989	3	900	8 9	81	160200	7921	21	79	168100	978121
990	3	900	9 0	81	162000	8100	0	81	170100	980100
991	3	900	9 1	81	163800	8281	81	82	172000	982081
992	3	900	9 2	81	165600	8464	64	84	174000	984064
993	3	900	9 3	81	167400	8649	49	86	176000	986049
994	3	900	9 4	81	169200	8836	36	88	178000	988036
995	3	900	9 5	81	171000	9025	25	90	180000	990025
996	3	900	9 6	81	172800	9216	16	92	182000	992016

997	3	900	9 7	81	174600	9409	9	94	184000	994009
998	3	900	9 8	81	176400	9604	4	96	186000	996004
999	3	900	9 9	81	178200	9801	1	98	188000	998001

Note: There is few additional trick while solving some number like 101, 102, 103, 104,200,201,202,203,300,301,400,401,500