

Trachtenberg Method

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Development

- Jakow Trachtenberg develops this mental calculation while in a Nazi Concentration Camp
- Uses quick simple mental calculations
- Developed a system for Multiplication, Addition, and Division

Trachtenberg Multiplication

- Supposedly faster method
- Trachtenberg called it the 2-finger method
- In general for each position n sum for all i
 $a(d_i) \times b(d_{(n-i)})$
 - When a is the last digit of the multiplier, b is the next to last digit of a , and d corresponding digit

$$\begin{array}{r} 1\ 2\ 3\ 4\ 5\ 6 \\ \hline \end{array} \times \begin{array}{r} 7\ 8\ 9 \\ \hline \end{array}$$

4

$$\begin{array}{r} 1\ 2\ 3\ 4\ 5\ 6 \\ \hline \end{array} \times \begin{array}{r} 7\ 8\ 9 \\ \hline \end{array}$$

84

Examples

~~0308~~ 3 x 5 9

9

0007²

009⁸7

08⁴97

$$9 \times 3 = 27, 5 \times 0 = 0$$

$$9 \times 8 = 72, 5 \times 3 = 15$$

$$72 + 15 = 2 = 89$$

$$9 \times 0 = 0, 5 \times 8 = 40$$

$$40 + 8 = 48$$

$$9 \times 0 = 0, 5 \times 0 = 0$$

$$4 + 0 + 0 = 4$$

4897

Examples cont.

0 0 5 6 2 x 3 7

~~0~~ 0 1 4 0 4¹

0 0 0 9⁴ 4 4 2 + 6 + 1 = 49

0 0 7⁵ 9 4 3⁵ + 18 + 4 = 57

0 0² 7 9 4

0 + 0 + 2 = 2

7 x

6x7=42, 2x3=6

5x7=35, 6x3=18

0x7=0, 5x3=15

0 + 15 + 5 = 20
0x7=0, 0x3=0

20794

Additional examples

488 x 65

31720

777 x 283

219891

489 x 321

156969