

Number Patterns are Amazing!!

Sequential Inputs of numbers with 8

$$\begin{aligned}1 \times 8 + 1 &= 9 \\12 \times 8 + 2 &= 98 \\123 \times 8 + 3 &= 987 \\1234 \times 8 + 4 &= 9876 \\12345 \times 8 + 5 &= 98765 \\123456 \times 8 + 6 &= 987654 \\1234567 \times 8 + 7 &= 9876543 \\12345678 \times 8 + 8 &= 98765432 \\123456789 \times 8 + 9 &= 987654321\end{aligned}$$

Sequential 1's with 9

$$\begin{aligned}1 \times 9 + 2 &= 11 \\12 \times 9 + 3 &= 111 \\123 \times 9 + 4 &= 1111 \\1234 \times 9 + 5 &= 11111 \\12345 \times 9 + 6 &= 111111 \\123456 \times 9 + 7 &= 1111111 \\1234567 \times 9 + 8 &= 11111111 \\12345678 \times 9 + 9 &= 111111111 \\123456789 \times 9 + 10 &= 1111111111\end{aligned}$$

Sequential 8's with 9

$$\begin{aligned}9 \times 9 + 7 &= 88 \\98 \times 9 + 6 &= 888 \\987 \times 9 + 5 &= 8888 \\9876 \times 9 + 4 &= 88888 \\98765 \times 9 + 3 &= 888888 \\987654 \times 9 + 2 &= 8888888 \\9876543 \times 9 + 1 &= 88888888 \\98765432 \times 9 + 0 &= 888888888\end{aligned}$$

Numeric Palindrome with 1's

$$\begin{aligned}1 \times 1 &= 1 \\11 \times 11 &= 121 \\111 \times 111 &= 12321 \\1111 \times 1111 &= 1234321 \\11111 \times 11111 &= 123454321 \\1111111 \times 1111111 &= 1234567654321 \\11111111 \times 11111111 &= 123456787654321 \\111111111 \times 111111111 &= 12345678987654321\end{aligned}$$

Without 8

$$\begin{aligned}12345679 \times 9 \times 1 &= 111111111 \\12345679 \times 9 \times 2 &= 222222222 \\12345679 \times 9 \times 3 &= 333333333 \\12345679 \times 9 \times 4 &= 444444444 \\12345679 \times 9 \times 5 &= 555555555 \\12345679 \times 9 \times 6 &= 666666666 \\12345679 \times 9 \times 7 &= 777777777 \\12345679 \times 9 \times 8 &= 888888888 \\12345679 \times 9 \times 9 &= 999999999\end{aligned}$$

Sequential Inputs of 9

$$\begin{aligned}9 \times 9 &= 81 \\99 \times 99 &= 9801 \\999 \times 999 &= 998001 \\9999 \times 9999 &= 99980001 \\99999 \times 99999 &= 9999800001 \\999999 \times 999999 &= 999998000001 \\9999999 \times 9999999 &= 99999980000001 \\99999999 \times 99999999 &= 9999999800000001 \\999999999 \times 999999999 &= 999999998000000001\end{aligned}$$

Sequential Inputs of 6

$$\begin{aligned}6 \times 7 &= 42 \\66 \times 67 &= 4422 \\666 \times 667 &= 444222 \\6666 \times 6667 &= 44442222 \\66666 \times 66667 &= 4444422222 \\666666 \times 666667 &= 444444222222 \\6666666 \times 6666667 &= 44444442222222 \\66666666 \times 66666667 &= 4444444422222222 \\666666666 \times 666666667 &= 444444444222222222 \\6666666666 \times 6666666667 &= 44444444442222222222\end{aligned}$$

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