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Features



# Mysterious number 6174

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## Number guessing puzzles

The first beautiful puzzle was by Yukio Yamamoto in Japan:

*If you multiply two five digit numbers you can get the answer 123456789. Can you guess the two five digit numbers?*

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

And the second, very similar puzzle:

$$\begin{array}{r}
 \phantom{x} \quad \square \square \square \square \square \\
 \times \quad \square \square \square \square \square \\
 \hline
 1 \ 2 \ 3 \ 4 \ 5 \ 6 \ 7 \ 8 \ 4
 \end{array}$$

## SOLUTION

The answers are:

$$123456789 = (3 \times 3607) \times (3 \times 3803) = 10821 \times 11409$$

and

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$$123456784 = (2 \times 11^2 \times 43) \times (2^3 \times 1483) = 10406 \times 11864$$

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