

Secondary Puzzle Page – Solutions

NOT A ZERO

What is the last non-zero digit of $2^{57} \times 3^4 \times 5^{53}$?

This problem is taken from the [UKMT Mathematical Challenges](#).

SOLUTION

Answer: 6

The zeros on the end of the number are caused by factors of 10 .

$$2^{57} \times 3^4 \times 5^{53} = 2^4 \times 3^4 \times 2^{53} \times 5^{53} = 2^4 \times 3^4 \times 10^{53} = 6^4 \times 10^{53}$$

Last non-zero digit comes from 6^4

$$6^1 = 6$$

$$6^2 = 36$$

$$6^3 = \dots 6$$

$$6^4 = \dots 6$$

This means the last non-zero digit will be a 6 .

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