

Multiplying and Dividing in Standard Form

To multiply or divide in standard form, multiply or divide the integer or decimal parts, then use the laws of indices to simplify the powers of 10.



Example

Work out

$$(4 \times 10^3) \times (2 \times 10^6)$$

1 Multiply the integer parts.

$$4 \times 2 = 8$$

2 Simplify the powers of 10

$$10^3 \times 10^6 = 10^9$$

$$(4 \times 10^3) \times (2 \times 10^6) = 8 \times 10^9$$



Example

Work out

$$(5 \times 10^4) \div (2 \times 10^6)$$

1 Multiply the integer parts.

$$5 \div 2 = 2.5$$

2 Simplify the powers of 10

$$10^4 \div 10^6 = 10^{-2}$$

$$(5 \times 10^4) \div (2 \times 10^6) = 2.5 \times 10^{-2}$$

Check that your final answer is in standard form, if necessary.