

(a) Work out $2 \times 10^6 \times 8 \times 10^4$
Give your answer in standard form.

(b) Work out $\frac{2 \times 10^6}{8 \times 10^4}$

Give your answer as an ordinary number

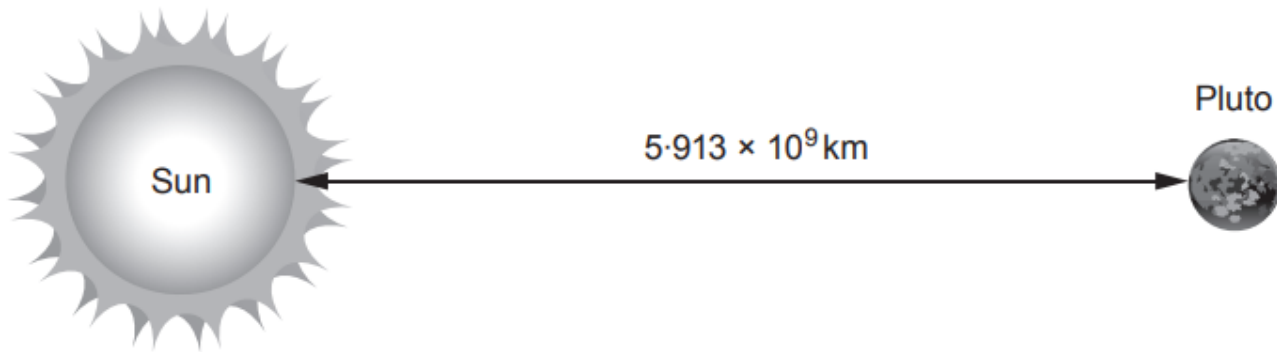
(a) Write the number 0.000 000 7 in standard form.

(b) Write 3×10^5 as an ordinary number.

(c) Work out $4 \times 10^3 \times 8 \times 10^5$
Give your answer in standard form.

Astronomers use astronomical units (AU) to describe distances in our solar system.
The distance between the Sun and the Earth is 1 AU.
1 AU is 1.496×10^8 km, correct to 4 significant figures.

- (a) The distance of Pluto from the Sun is 5.913×10^9 km, correct to 4 significant figures.



Siôn says that the distance of Pluto from the Sun is less than 50 AU.

Using **suitable** approximations, estimate the distance of Pluto from the Sun, in AU, to show that Siôn is correct.

You must show all your working.

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- (b) A light year is the distance light travels in one year.

1 light year is approximately 63 000 AU.

Estimate the length of a light year in km.
Give your answer in standard form.

- (a) Write 6.75×10^{-4} as an ordinary number.

- (b) Work out
$$\frac{2.56 \times 10^6 \times 4.12 \times 10^{-3}}{1.6 \times 10^{-2}}$$

Give your answer in standard form.

(a) Write 1.63×10^{-3} as an ordinary number.

(b) Write 438 000 in standard form.

(c) Work out $(4 \times 10^3) \times (6 \times 10^{-5})$
Give your answer in standard form.

$$a = 4.2 \times 10^{-24}$$

$$b = 3 \times 10^{145}$$

Work out the value of $a \times b$
Give your answer in standard form.

The table gives information about the population, correct to 2 significant figures, of each of five cities in 2018

City	Population (2018)
Ahmedabad	7.7×10^6
Barcelona	5.5×10^6
Chicago	8.8×10^6
Lagos	1.3×10^7
Tokyo	3.7×10^7

(a) Write 8.8×10^6 as an ordinary number.

(b) Which of these cities had the least population in 2018?

(c) Work out the difference between the population of Tokyo and the population of Ahmedabad in 2018
Give your answer in standard form correct to 2 significant figures.

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(a) Write 6.25×10^{-4} as an ordinary number.

(b) Work out $(2.4 \times 10^{12}) \div (9.6 \times 10^4)$
Give your answer in standard form.

(a) Write 9.32×10^{-5} as an ordinary number.

(b) Work out $3 \times 10^5 - 6 \times 10^4$
Give your answer in standard form.

(c) Work out $(3 \times 10^{55}) \times (6 \times 10^{65})$
Give your answer in standard form.

(a) Write $(9 \times 10^4):(4.5 \times 10^6)$ in the form $1:n$ where n is an integer.

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(b) Write the following numbers in order of size.
Start with the smallest number.

$$5.625 \times 10^4$$

$$5625$$

$$56\,250 \times 10^{-3}$$

$$0.005\,625 \times 10^5$$

↓ The table gives the amount of rice produced by each of two countries in 2020

Country	Amount of rice (tonnes)
Indonesia	3.5×10^7
Argentina	8.2×10^5

(a) Write 3.5×10^7 as an ordinary number.

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In 2020, Japan produced 6 780 000 more tonnes of rice than Argentina.

(b) Work out the amount of rice Japan produced in 2020
Give your answer in standard form.

$$1.25 \times 10^{-12} = k \times (4 \times 10^{-20})$$

Work out the value of k .

Give your answer in standard form.

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- (a) (i) Write 5.3×10^4 as an ordinary number.
(ii) Write 7.4×10^{-5} as an ordinary number.
- (b) Calculate the value of $9.7 \times 10^6 + 2.45 \times 10^7$
Give your answer in standard form.