

Higher Numeracy Sample 1 P1 Q3b

- (b) Hari has a gold coin.
It weighs 8g.
What does this weigh in kg?
Circle your answer.

[1]

$8 \times 10^3 \text{ kg}$

$8 \times 10^{-2} \text{ kg}$

$8 \times 10^{-3} \text{ kg}$

8^{-2} kg

8^{-3} kg

Higher Numeracy Summer 2017 P1 Q7

- (a) A standard piece of A4 paper is usually 0.08 mm thick.
What is 0.08 mm written in metres in standard form?
Circle your answer.

[1]

8×10^4

8×10^{-4}

8×10^{-3}

8×10^3

8×10^{-5}

- (b) A piece of card is 1 mm thick.
A stack of these pieces of card is 3×10^{-2} metres high.

(i) Calculate how many pieces of card there are in the stack.

[2]

(ii) What assumption have you made in answering (b)(i)?

[1]

- (c) In 2012 it was recorded that
- the total mass of the paper used for printing newspapers, in the world, was 2.88×10^7 tonnes,
 - the world population was approximately 7.2×10^9 people.

Use this information to calculate the mass of paper per person used to print newspapers in 2012.

Give your answer in kg per person.

[4]

Higher Maths Nov 2017 P1 Q5

- (a) Express 0.00042 in standard form.

[1]

- (b) Calculate the value of $\frac{7.2 \times 10^6}{2 \times 10^{-2}}$.

Give your answer in standard form.

[1]

- (c) Calculate the value of $(4.7 \times 10^5) - (6.2 \times 10^4)$.
Give your answer in standard form.

[2]

Higher Maths Sample 2 P1 Q6

Find, in standard form, the value of

(a) $\frac{2.7 \times 10^{10}}{6000}$,

[2]

(b) $(4.5 \times 10^{-2}) \times (3 \times 10^{-3})$.

[2]

Higher Maths Summer 2018 P1 Q5

(a) Calculate the value of $(2 \times 10^{-4}) \times (7.8 \times 10^9)$.
Give your answer in standard form.

[2]

(b) Calculate the value of $\frac{3.9 \times 10^8}{3000}$.

Give your answer in standard form.

[2]

Higher Maths Nov 2016 P1 Q5

Find, in standard form, the value of each of the following.

(a) $\frac{7.5 \times 10^6}{5000}$

[2]

(b) $(2.3 \times 10^3) + (6.4 \times 10^4)$

[2]

Higher Numeracy Summer 2019 P1 Q5a

You are given that:

1 gigalitre = 1 000 000 m³

1 megalitre = 1 million litres

Lake Vyrnwy is a reservoir in mid Wales.

- (a) Lake Vyrnwy can release between 25 and 45 megalitres of water per day from the dam.

The lake also supplies water through underground pipes to another reservoir at a rate of 230 000 m³ per day.



- (i) How many litres are there in 25 megalitres?
Circle your answer.

[1]

25×10^8

25×10^{-6}

25×10^7

2.5×10^6

2.5×10^7

Higher Maths Sample 1 P1 Q7

Find, in standard form, the value of

(a) $(4.1 \times 10^{-5}) \times 3000$, [2]

(b) $(1.5 \times 10^3) \div (3 \times 10^6)$. [2]

Higher Maths Summer 2019 P1 Q7b

(b) Calculate $(3.4 \times 10^{-5}) \times 700$.
Give your answer in standard form. [2]

Higher Maths June 2017 P1 Q9

Calculate the value of $(5.41 \times 10^5) + (2.3 \times 10^4)$.
Give your answer in standard form. [2]

Higher Numeracy Nov 2018 P2 Q8a

Heledd is the captain of a cargo ship. She is planning her next voyage.



(a) Heledd has been employed to deliver 3×10^5 tonnes of sand.

Heledd needs to know the volume of the sand before the sand can be loaded on to the ship.

She has been given the following information about the sand:

Mass of a grain of sand	Volume of a grain of sand
1.2×10^{-3} grams	0.32 mm^3

(i) Calculate the number of grains of sand in 3×10^5 tonnes of sand.
Give your answer in standard form. [3]

(ii) Calculate the volume of the 3×10^5 tonnes of sand in m^3 . [3]

Higher Maths Nov 2018 P2 Q10

A googol is the number 1×10^{100} .

Circle the value that is 90% of a googol.

[1]

1×9^{100}

1×10^{90}

1×9^{90}

9×10^{90}

9×10^{99}

Higher Numeracy Summer 2018 P1 Q10

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.

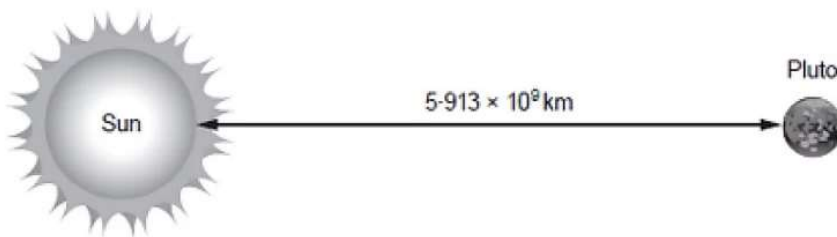


Diagram not drawn to scale

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.

[2]

(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.

[3]