

National 5 Maths Scientific Notation

SQA past paper and specimen paper
questions and answers by topic

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- (a) The Earth is approximately spherical with a radius of 6400 kilometres.
Calculate the volume of the Earth giving your answer in scientific notation, correct to 2 significant figures.



3

- (b) The approximate volume of the Moon is 2.2×10^{10} cubic kilometres.
Calculate how many times the Earth's volume is greater than the Moon's.

2

Answers:

- (a) $1.1 \times 10^{12} \text{ km}^3$
(b) 50

National 5 Maths
SQA 2016 Paper 2
Question 2

A pollen sample weighs 12 grams
and contains 1.5×10^9 pollen grains.



Calculate the weight of **one** pollen grain in grams.
Give your answer in scientific notation.

2

Answer:

$$8 \times 10^{-9} \text{ g}$$

National 5 Maths
SQA 2017 Specimen
Paper 2 Question 2

There are 3×10^5 platelets per millilitre of blood.

On average, a person has 5.5 litres of blood.

On average, how many platelets does a person have in their blood?

Give your answer in scientific notation.

2

Answer:

$$1.65 \times 10^9$$

Venus and Earth are two planets within our solar system.



Venus



Earth

The volume of Venus is approximately 9.3×10^{11} cubic kilometres.

This is 85% of the volume of Earth.

Calculate the volume of Earth.

3

Answer:

$$1.094 \times 10^{12} \text{ km}^3$$

National 5 Maths
SQA 2019 Paper 2
Question 4

A sesame seed weighs 3.6×10^{-6} kilograms.

The weight of a poppy seed is 8% of the weight of a sesame seed.

Calculate the weight of a poppy seed in kilograms.

Give your answer in scientific notation.

2

Answer:

$$2.88 \times 10^{-7} \text{ kg}$$

National 5 Maths
SQA 2021 Paper 2
Question 2

Light travels at 3×10^8 metres per second.

A star is 4.2×10^{17} metres away from Earth.

Calculate the number of seconds it takes for light from this star to reach Earth.

Give your answer in scientific notation.

2

Answer:

1.4×10^9 seconds

National 5 Maths
SQA 2023 Paper 2
Question 2

The mass of a helium atom is 6.64×10^{-24} grams.

A flask contains 300 grams of helium.

Calculate the number of helium atoms in this flask.

Give your answer in scientific notation, correct to 3 significant figures.

3

Answer:

$$4.52 \times 10^{25}$$

National 5 Maths
SQA 2024 Paper 2
Question 2

An ant colony occupies an area of 250 hectares.
There is an average of 1.22×10^6 ants per hectare.
Calculate the number of ants in the colony.
Give your answer in scientific notation.

2

Answer:

3.05×10^8

National 5 Maths
SQA 2025 Paper 2
Question 3

The mass of one atom of gold is 3.27×10^{-22} grams.

The mass of one atom of carbon is 6.1% of the mass of an atom of gold.

Calculate the mass of one atom of carbon.

Give your answer in scientific notation.

2

Answer:

1.99×10^{-23} grams