Name: _____

GCSE (1 - 9) Standard Form (Higher Paper)	Solutions:

These questions are compiled from *released* Pearson Edexcel GCSE maths exam papers
They contain exam questions from up until the ***Summer 2023*** exam series
More recent exam papers do exist but are withheld for mock exams
As new exam papers are released these worksheets will gradually be updated
The ***most current*** version of these worksheets will always be available at: kennethstafford.co.uk
These worksheets were made using examq.co.uk

Question	Where the question appeared
1	Edexcel, GCSE, Autumn 2017, Paper 3H, Q7
2	Edexcel, GCSE, Autumn 2018, Paper 2H, Q7
3	Edexcel, GCSE, Autumn 2019, Paper 2H, Q7
4	Edexcel, GCSE, Autumn 2019, Paper 3H, Q7
5	Edexcel, GCSE, Autumn 2020, Paper 1H, Q9
6	Edexcel, GCSE, Autumn 2020, Paper 3H, Q10
7	Edexcel, GCSE, Summer 2017, Paper 1H, Q8
8	Edexcel, GCSE, Summer 2017, Paper 2H, Q10
9	Edexcel, GCSE, Summer 2018, Paper 3H, Q9
10	Edexcel, GCSE, Summer 2019, Paper 2H, Q8
11	Edexcel, GCSE, Summer 2019, Paper 3H, Q11

1

Work out $(13.8 \times 10^{7}) \times (5.4 \times 10^{-12})$
Give your answer as an ordinary number.

.....

(Total for Question 7 is 2 marks)

[Edexcel, GCSE, Autumn 2017, Paper 3H, Q7]

2

(a) Write the number 0.000 086 23 in standard form.

.....

(1)

(b) Work out $\dfrac{3.2 \times 10^{3} + 5.1 \times 10^{-2}}{4.3 \times 10^{-4}}$

Give your answer in standard form, correct to 3 significant figures.

.....

(2)

(Total for Question 7 is 3 marks)

[Edexcel, GCSE, Autumn 2018, Paper 2H, Q7]

3

Work out $(3.42 \times 10^{-7}) \div (7.5 \times 10^{-6})$
Give your answer in standard form.

.....

(Total for Question 7 is 2 marks)

[Edexcel, GCSE, Autumn 2019, Paper 2H, Q7]

4

(a) Write 32 460 000 in standard form.

.....

(1)

(b) Write 4.96×10^{-3} as an ordinary number.

.....

(1)

Asma was asked to compare the following two numbers.

$$A = 6.212 \times 10^8 \quad \text{and} \quad B = 4.73 \times 10^9$$

She says,

"6.212 is bigger than 4.73 so A is bigger than B."

(c) Is Asma correct?
You must give a reason for your answer.

.....

.....

.....

(1)

(Total for Question 7 is 3 marks)

[Edexcel, GCSE, Autumn 2019, Paper 3H, Q7]

5

Write these numbers in order of size.
Start with the smallest number.

6.72×10^5 67.2×10^{-4} 672×10^4 $0.000\,672$

.....

(Total for Question 9 is 2 marks)

[Edexcel, GCSE, Autumn 2020, Paper 1H, Q9]

6

A person's heart beats approximately 10^5 times each day.
A person lives for approximately 81 years.

(a) Work out an estimate for the number of times a person's heart beats in their lifetime.
Give your answer in standard form correct to 2 significant figures.

.....

(2)

2×10^{12} red blood cells have a total mass of 90 grams.

(b) Work out the average mass of 1 red blood cell.
Give your answer in standard form.

..... grams

(2)

(Total for Question 10 is 4 marks)

[Edexcel, GCSE, Autumn 2020, Paper 3H, Q10]

7

(a) Write 7.97×10^{-6} as an ordinary number.

.....

(1)

(b) Work out the value of $(2.52 \times 10^{5}) \div (4 \times 10^{-3})$
Give your answer in standard form.

.....

(2)

(Total for Question 8 is 3 marks)

[Edexcel, GCSE, Summer 2017, Paper 1H, Q8]

8

The table shows some information about eight planets.

Planet	Distance from Earth (km)	Mass (kg)
Earth	0	5.97×10^{24}
Jupiter	6.29×10^{8}	1.898×10^{27}
Mars	7.83×10^{7}	6.42×10^{23}
Mercury	9.17×10^{7}	3.302×10^{23}
Neptune	4.35×10^{9}	1.024×10^{26}
Saturn	1.28×10^{9}	5.68×10^{26}
Uranus	2.72×10^{9}	8.683×10^{25}
Venus	4.14×10^{7}	4.869×10^{24}

(a) Write down the name of the planet with the greatest mass.

.....

(1)

(b) Find the difference between the mass of Venus and the mass of Mercury.

..... kg

(1)

Nishat says that Neptune is over a hundred times further away from Earth than Venus is.

(c) Is Nishat right?
You must show how you get your answer.

(2)

(Total for Question 10 is 4 marks)

[Edexcel, GCSE, Summer 2017, Paper 2H, Q10]

9

$$T = \sqrt{\frac{w}{d^3}}$$

$w = 5.6 \times 10^{-5}$
$d = 1.4 \times 10^{-4}$

(a) Work out the value of T.
Give your answer in standard form correct to 3 significant figures.

$T =$ .....

(2)

w is increased by 10%
d is increased by 5%

Lottie says,

"The value of T will increase because both w and d are increased."

(b) Lottie is wrong.
Explain why.

.....

.....

(2)

(Total for Question 9 is 4 marks)

[Edexcel, GCSE, Summer 2018, Paper 3H, Q9]

10

(a) Write 0.00562 in standard form.

.....

(1)

(b) Write 1.452×10^3 as an ordinary number.

.....

(1)

(Total for Question 8 is 2 marks)

[Edexcel, GCSE, Summer 2019, Paper 2H, Q8]

11

In May 2019, the distance between Earth and Mars was 3.9×10^7 km.

In May 2019, a signal was sent from Earth to Mars.
Assuming that the signal sent from Earth to Mars travelled at a speed of 3×10^5 km per second,

(a) how long did the signal take to get to Mars?

..... seconds

(2)

The speed of the signal sent from Earth to Mars in May 2019 was actually less than 3×10^5 km per second.

(b) How will this affect your answer to part (a)?

.....

.....

.....

(1)

(Total for Question 11 is 3 marks)

[Edexcel, GCSE, Summer 2019, Paper 3H, Q11]