Q1.

(a) Work out   2.4 × 0.002

....

Answer ....

(1)

(b) Write 1.2×10^{-5} as an ordinary number.

....

Answer ....

(1)

(c) Write   2 500 000   in standard form.

....

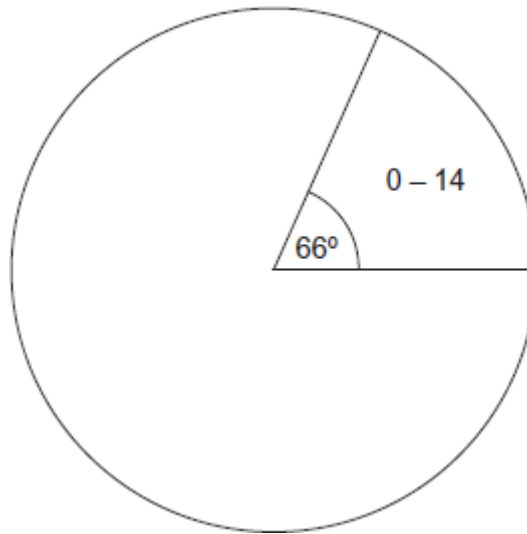Answer ....

(1)
(Total 3 marks)

Q2.

In 2011 there were 3.22×10^{7} females in the UK.
This was 51% of the whole population.

The pie chart shows an estimate of the males aged 0 − 14 years old in 2011.

Male population in 2011

Source: http://www.ons.gov.uk

Use this information to work out the number of males aged 0 − 14 years old in 2011.
Write your answer in standard form.

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Answer ....

(Total 6 marks)

Q3.(a)   Write   0.000 72   in standard form.

Answer ....

(1)

(b)   Divide 80 million by 20 000
Write your answer in standard form.

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Answer ....

(3)
(Total 4 marks)

Q4. There were 17 million families in the UK in 2006.

(a)   The mean number of children per family was 1.8

How many children were there in the UK?
Give your answer in standard form.

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Answer ....

(2)

(b)   The total income of families in the UK was   £ 5.6×10^{11}

What was the mean income per family?
Give your answer to an appropriate degree of accuracy.

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Answer £ ....

(3)
(Total 5 marks)

Q5.(a)   Work out $(6.45 \times 10^{6}) \times (2.5 \times 10^{-4})$

Write your answer in standard form.

Answer ....

(2)

(b)   Here is a number machine.

Input

Output

-1000 → $\div 20$ → 5.05×10^3
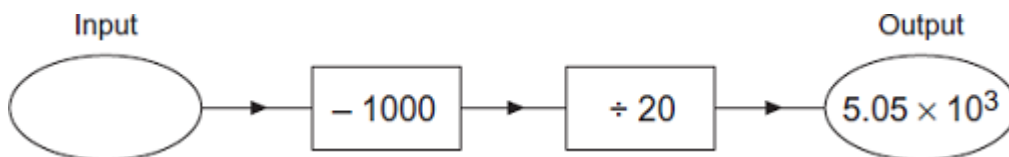
Work out the **input** when the output is 5.05×10^3

Write your answer in standard form.

Answer ....

(3)
(Total 5 marks)

Q6. Here is a list of numbers.

1 000 000 4.6×10^4 63 000 5×10^3 1.7×10^5

Work out the range.
Write your answer in standard form.

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Answer ....

(Total 4 marks)

Q7. Write the number 4540 million in standard form.

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Answer ....

(Total 2 marks)

Q8. (a) Write 2.46×10^{-3} as an ordinary number.

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Answer ....

(1)

(b) Work out the value of $(1.8 \times 10^5) \div (9 \times 10^2)$

Give your answer in standard form.

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Answer ....

(2)
(Total 3 marks)

Q9. (a) Work out $(3 \times 10^5) \times (6 \times 10^9)$

Give your answer in standard form.

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Answer ....

(2)

(b)   Work out $(3 \times 10^5) \div (6 \times 10^9)$

Give your answer in standard form.

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Answer ....

(2)
(Total 4 marks)

Q10. Here are two events.

    A   A ticket wins the National Lottery.
    B   A fair coin lands on heads five times in a
row.

The probability of **A** happening is 7.15×10^{-8}.

How many more times likely is **B** than **A**?
Give your answer in standard form to 2 significant figures.

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Answer ....

(Total 3 marks)

Q11.(a)   Write the number 5.28×10^{-3} as an ordinary decimal number.

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Answer ....

(1)

(b)   Work out $(7 \times 10^3)^2$
Give your answer in standard form.

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Answer ....

(2)
(Total 3 marks)

Q12. It is estimated that there are 7 500 000 000 000 000 000 grains of sand on the world's beaches.

(Source University of Hawaii)

(a)   Write this number in standard form.

Answer ....

(1)

(b)   This number is 10% higher than the previous estimate.

Calculate the previous estimate.
Give your answer in standard form to two significant figures.

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Answer ....

(3)
(Total 4 marks)