

**Q1.**

(a) Work out  $2.4 \times 0.002$

.....

Answer .....

**(1)**

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

.....

Answer .....

**(1)**

(c) Write 2 500 000 in standard form.

.....

Answer .....

**(1)**

**(Total 3 marks)**

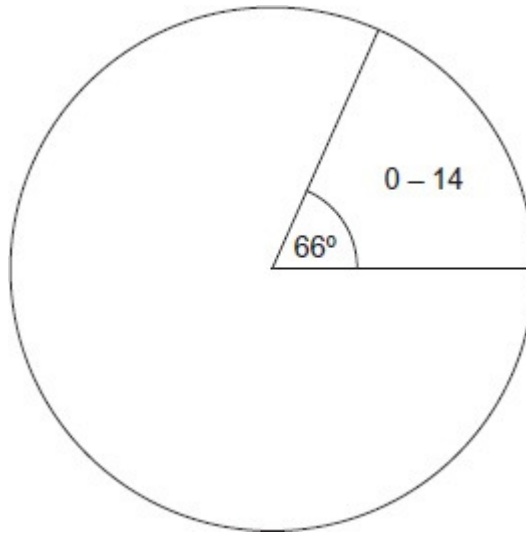
**Q2.**

In 2011 there were  $3.22 \times 10^7$  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.

.....  
.....  
.....  
.....  
.....  
.....

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.

.....  
.....

.....  
.....

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.

.....  
.....  
.....

Answer .....

**(2)**

- (b) The total income of families in the UK was £  $5.6 \times 10^{11}$

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

.....  
.....  
.....

Answer £ .....

**(3)**  
**(Total 5 marks)**

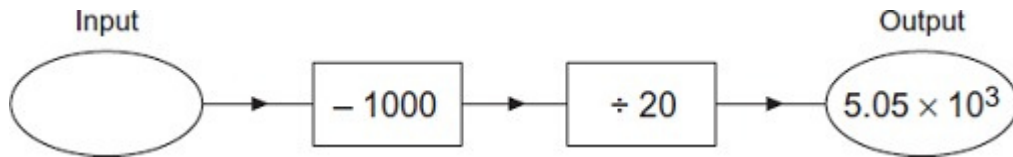
**Q5.(a)** Work out  $(6.45 \times 10^6) \times (2.5 \times 10^{-4})$

Write your answer in standard form.

Answer .....

(2)

(b) Here is a number machine.



Work out the **input** when the output is  $5.05 \times 10^3$

Write your answer in standard form.

Answer .....

(3)

(Total 5 marks)

**Q6.** Here is a list of numbers.

1 000 000     $4.6 \times 10^4$     63 000     $5 \times 10^3$      $1.7 \times 10^5$

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

.....

.....

.....

.....

.....

.....

Answer .....

(Total 4 marks)

**Q7.** Write the number 4540 million in standard form.

.....  
.....

Answer .....

**(Total 2 marks)**

**Q8.(a)** Write  $2.46 \times 10^{-3}$  as an ordinary number.

.....  
.....

Answer .....

**(1)**

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

Give your answer in standard form.

.....  
.....  
.....  
.....

Answer .....

**(2)**

**(Total 3 marks)**

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

Give your answer in standard form.

.....

.....  
.....

Answer .....

(2)

(b) Work out  $(3 \times 105) \div (6 \times 109)$

Give your answer in standard form.

.....  
.....  
.....

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  $7.15 \times 10^{-8}$ . How many more times likely is **B** than **A**?

Give your answer in standard form to 2 significant figures.

.....  
.....  
.....  
.....  
.....

Answer .....

(Total 3 marks)

**Q11.**(a) Write the number  $5.28 \times 10^{-3}$  as an ordinary decimal number.

.....

Answer .....

**(1)**

(b) ~~(Work 1.03)~~  
Give your answer in standard form.

.....

.....

.....

.....

Answer .....

**(2)**

**(Total 3 marks)**

**Q12.**It is estimated that there are 7 500 000 000 000 000 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.

.....

.....

.....

Answer .....

**(3)**  
**(Total 4 marks)**