KING EDWARD'S SCHOOL BATH

Entrance Examination Teach-In

2014 Materials

Name .....

School .....

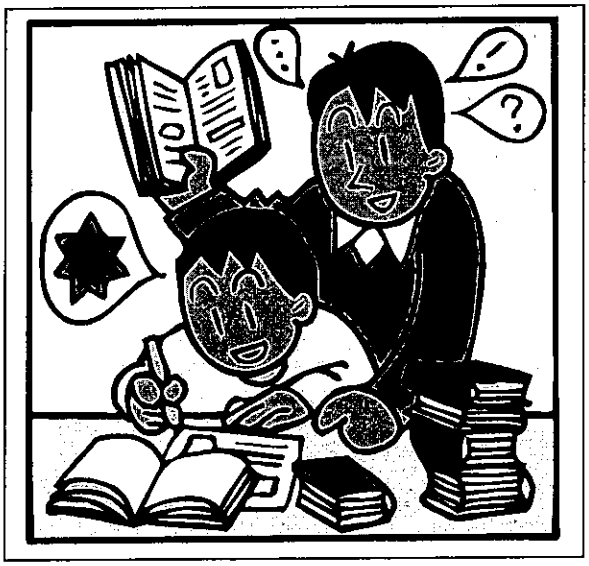
WELCOME!

We hope you will feel more at ease and more familiar with what we will be asking you to do in the **real** entrance examination as a result of what you hear and learn today. The people you meet today will also be helping on Saturday 25 January as well.

During the morning you will be introduced to the types of questions we will be asking. You will need this pack of materials and will also be able to take it home with you.

There will also be occasions when you will be able to ask individual questions. Don't be afraid to do this: we are here to help!

Good luck!



MATHEMATICS TEACH-IN

The actual entrance examination lasts for **50 minutes** and contains two sections:

Section A: Multiple Choice (approximately 40% of the available marks)
Section B: Written answers (approximately 60% of the available marks)

The examination is designed to contain content familiar to students working on topics from levels 4 and 5 of the National Curriculum, which includes the following general areas:

- Number: Pencil and paper arithmetic using all four operations, negative numbers, simplifying fractions, simple ratio and proportion problems, percentage/fraction of an amount, simple rounding, factors, multiples, primes, square numbers.
- Algebra: Coordinates in all four quadrants, number patterns, use formulae with two operations, inverse operations.
- Shape: Area/perimeter of a rectangle and simple compound shapes, symmetry, metric units, identifying shapes, angles in a triangle.
- Handling Data: Use of mean, median, mode and range, interpreting bar and pie charts, calculating simple probabilities, interpreting real-life graphs.

Please note: Calculators may not be used in the Mathematics examination

SECTION A

Circle the correct answer

1. Which of the following is **NOT** a factor of 36?

   A. 4 **B.** 18 **C.** 12 **D.** 8 **E.** 6

2. What is 72.34 ÷ 10 ?

   A. 723.4 **B.** 7.23 **C.** 0.7234 **D.** 7.234 **E.** 0.07234

3. The area of a square is 81 cm^2. What is its perimeter?

   A. 20.25 **B.** 32 **C.** 28 **D.** 40 **E.** 36

4. What is the missing number in the calculation below ?

$$\begin{array}{rccc} & 7 & 4 & 5 \\ - & 5 & \square & 3 \\ \hline & 1 & 6 & 2 \end{array}$$

A. 7 **B.** 9 **C.** 8 **D.** 6 **E.** 5

5. Which of the following has a curved surface?

A. Triangular prism **B.** Rectangular-based pyramid **C.** Cube

D. Cylinder **E.** Cuboid

6. Jenny is facing North West. She turns clockwise through 270^0. In which direction is she now facing ?

A. West **B.** South **C.** East **D.** South East **E.** South West

7. What name do we give to a quadrilateral which has four equal angles and two pairs of equal sides ?

A. Square **B.** Parallelogram **C.** Kite **D.** Rectangle **E.** Rhombus

8. Jane is asked to add 4 to a number, and then divide by 3. The answer she got was 8. What number did she start with ?

A. 10 **B.** 15 **C.** 30.5 **D.** 410 **E.** 20

9. A train leaves Bath Spa at 21.37 and arrives at 23.02. How long did the journey last ?

A. 2 hours 25 minutes **B.** 1 hour 22 minutes

C. 1 hour 25 minutes **D.** 1 hour 35 minutes

E. 1 hour 27 minutes

10. 1340 millimetres is the same as four of the answers below. Which one of the answers is **NOT** the same as 1340 mm ?

A. 134 cm **B.** 1m 34 cm **C.** 0.00134 km **D.** 1m 340 mm **E.** 13 m 40 cm

11. A group of pupils had the following number of pencils in their pencil cases: 5, 8, 5, 10, 12. What was the mean (average) number of pencils in a pencil case ?

A. 5 **B.** 10 **C.** 9 **D.** 8 **E.** 7

12. In Norway, the temperature on Friday was $-7\ ^0$ C. On Saturday, the temperature rose by $5\ ^0$ C, but on the Sunday, it then fell by $6\ ^0$ C. What was the temperature in Norway on Sunday ?

A. $-5\ ^0$C **B.** $-8\ ^0$C **C.** $-4\ ^0$C **D.** $4\ ^0$C **E.** $-7\ ^0$C

13. What is the remainder when 1224 is divided by 3 ?

A. 1 **B.** 0 **C.** 2 **D.** 6 **E.** 3

14. Which one of these amounts is different from each of the others ?

A. 10% of £100 **B.** $^3/_{10}$ of £33 **C.** $^1/_{20}$ of £200

D. 0.5% of £2000 **E.** 25% of £40

Section B

Write your answers in the space provided and show all your working out.

1. A map shows that the distance from Calais to Paris is 320 kilometres. 5 miles is approximately 8 kilometres. What is the approximate distance in miles from Calais to Paris ?

2. Toby buys 3 cakes at 86 pence each. How much change should he receive from £10 ?

3. A box of sweets contains 4 cola bottles, 10 chewy fried eggs and 16 lemon sherbets. What is the probability of randomly selecting a chewy fried egg?

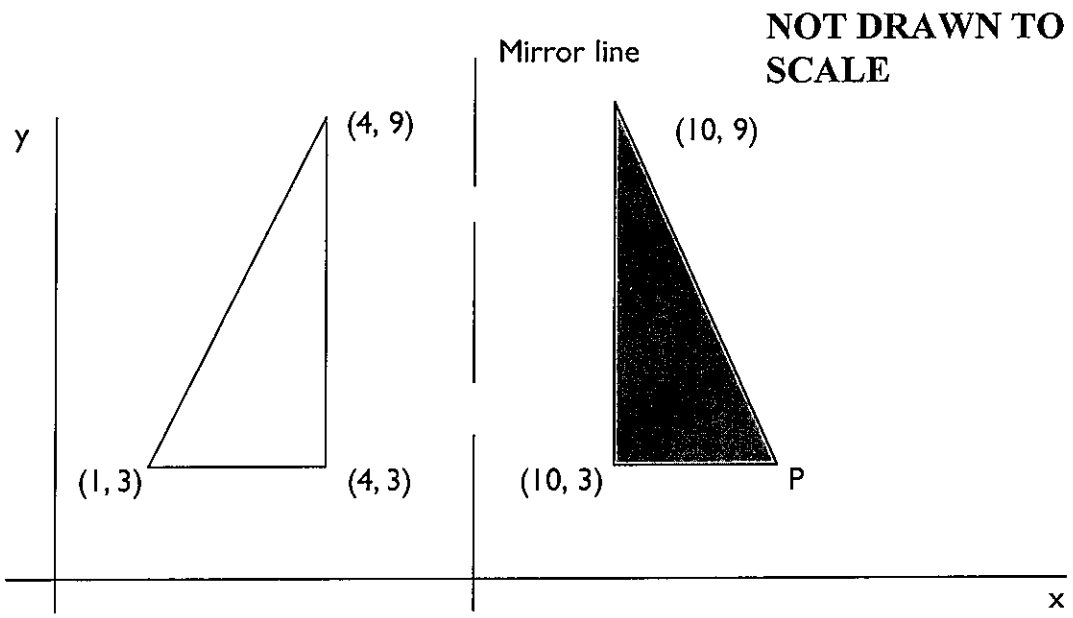
4. Here is a list of numbers:

1, 2, 5, 9, 17, 27, 57, 121

a) Which of these numbers are prime numbers?

b) Which of these numbers are square numbers?

5. The shaded triangle is a reflection of the white triangle in the mirror line.



What are the coordinates of point P ?

6. What is the answer to 8.6 - 3.75 ?

7. Work out 468 ÷ 18

8. 300 pupils gave their favourite premiership team. The results are shown in the pie chart.

NOT DRAWN TO SCALE

From the pie chart, how many pupils gave Chelsea as their favourite?

9. The sequence below is formed by using the rule:

"Multiply the previous number by three and then subtract four"

☐, 8, 20, 56, ☐

Fill in the two missing numbers.

10. Two angles in a triangle are 57^0 and 98^0. What is the size of the third angle?

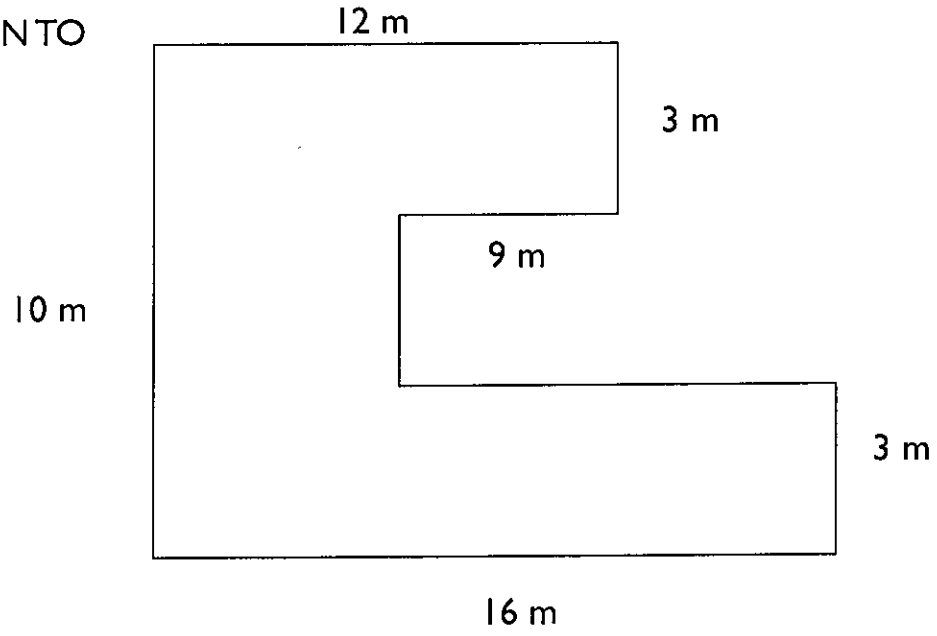
11. Fill in the missing numbers:

$\square - 6 = 9$ $\qquad$ $54 \div \square = 6$

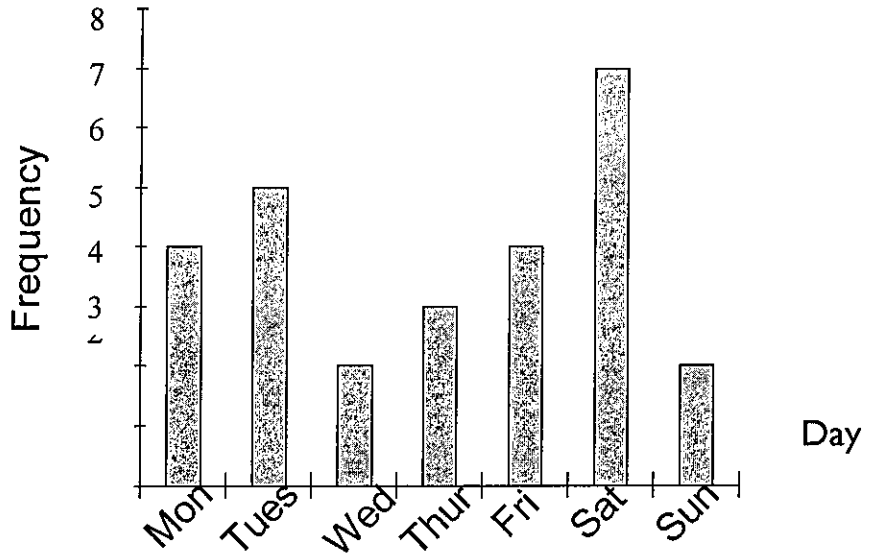
$23 \times \square = 115$ $\qquad$ $6 - \square = 13$

12. Find the area and perimeter of the shape below:

NOT DRAWN TO SCALE



13. This bar chart shows the days on which members of a Year 6 form were born.



(a) Which day had the most number of births?

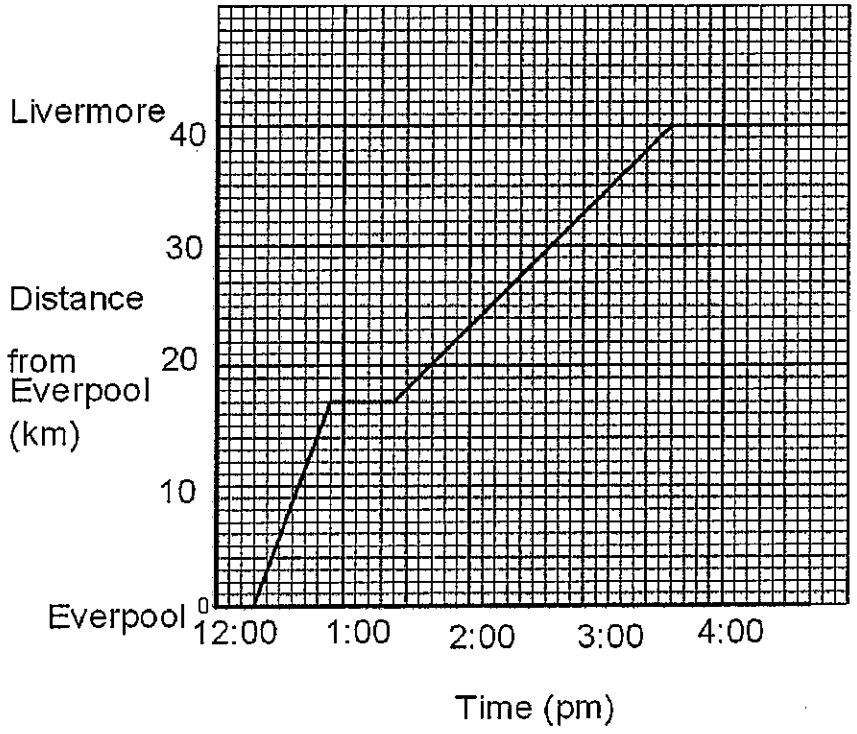
(b) How many people are there in the form?

(c) What fraction of the form were born on a week day?
(Write your answer in its simplest form)

14. The finishing numbers in the table below are related to their starting numbers by a simple rule. The rule is the same for each pair of numbers. What are the missing numbers in the table?

Starting Number	Finishing Number
2	5
4	11
	14
7	20
10	

15. Martin is cycling from Everpool to Livermore which are 40 km apart. The graph below shows his journey.



(a) Martin stopped for a rest on his journey. How long did he stop for ?

(b) After his stop, did Martin cycle faster or slower than before?
Give a reason for your answer.