ST OLAVE'S GRAMMAR SCHOOL
GODDINGTON LANE
ORPINGTON
BR6 9SH

SAMPLE QUESTIONS FOR
STAGE 2 ENTRANCE TEST

INTRODUCTORY NOTE FOR PARENTS/CARERS

Within this booklet, you will find examples of the type of questions that may appear in the Stage 2 Entrance Test.

It is important to note that these questions should only be used as a guide to the type of questions that may arise both in the English and Mathematics Test.

The School holds the right to change the format of the questions to ensure we are correctly assessing what candidates are capable of without any special preparation.

St Olave's Stage 2 Mathematics Test for Year 7 Entry
Syllabus and Sample Questions

The Mathematics Test Paper will consist of questions of generally increasing difficulty. The paper will last 1 hour. The basis of the syllabus will be the concepts within the National Curriculum, including Level 4 standard. However, the problems set will often involve manipulation and application of these concepts in what may be unfamiliar and more challenging situations. Such questions seek to test candidates' problem-solving abilities.

Entrance Test Topic Details

	Topics
Number	* Addition and subtraction of whole numbers and decimals. * Multiplication and division of whole numbers and decimals by whole numbers. * Calculations involving money, time, metric length and mass. * Fractions and percentage calculations.
Algebra	* Types of number: primes, factors, multiples, squares. * Numerical patterns and sequences. * Algebra including formulae in words and finding unknown values by logical deduction. * Co-ordinates.
Shape, Space And Measure	* Use of 2-D nets to make 3-D objects, e.g. cube. * Congruence, line and rotational symmetry. * Reading scales and selection of appropriate units. * Perimeter and area. * Volumes.
Handling Data	* Construct and use simple frequency tables for discrete data. * Represent and understand data represented using frequency diagrams and line graphs. * Mode and median of discrete data. * Simple concepts of probability.

Sample Question Paper

Within this booklet is a sample paper of about the length of a full paper (i.e. around 60 minutes). Answers are provided at the end of this booklet. The following instructions are the same as those for the actual test paper.

- Write in pencil.
- No calculators are allowed.
- Work through the paper carefully without rushing.
- Show your workings in the space provided with each question.
- If you cannot do a question go on to the next one.

1. The table below gives the number of people visiting a country park in a three month period.

Month	January	February	March
Number of people	1878	2136	3227

(a) Find the total number of people visiting the country park in the three month period.

Answer: _____ people

(b) In April there were 379 fewer visitors than in March.
How many people visited the country park in April?

Answer : _____ people

2. What decimal number is 0.027 less than 2?

Answer: _____ people

3. Write, in figures, ten thousand and twenty-eight.

Answer: _____

4. (a) Calculate 382 x 9.

Answer: _____

(b) **Hence** find the value of 382 x 18
[You must show how you have used your answer to part (a) to answer part (b)]

Answer : _____

5. Alex has been alive 7056 days. How many **fortnights** is this?

Answer: _____ fortnights

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6. Arrange these numbers in **increasing order** of size

$\frac{1}{4}$ 0.205 0.025 $\frac{2}{5}$ 0.04

Smallest Largest

Answer : _____ _____ _____ _____ _____

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7. How much more is three quarters of £14 than two fifths of £17?

Answer: £ _____

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8. A rectangle has an area of 64 square centimetres (cm^2).
It is four times as long as it is wide. Find the perimeter of the rectangle.

Answer: _____

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9. A film on TV started at 8.49 pm and lasted for 2¼ hours. At what time did the film end?

Answer: _____

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10. Samir has a quarter of a cake to share with two of his friends. What fraction of the whole cake does each of the three boys get?

Answer: _____

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11. Two children are now aged 9 years 8 months and 5 years 11 months. What will be the total of their ages in 10 months from now?

Answer: _____ years _____ months

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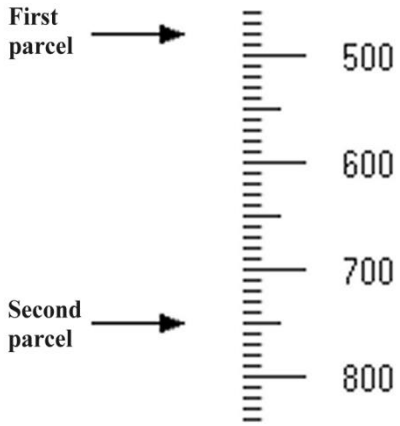
12. Complete the missing 8 boxes in the following table.
Put 'Yes' or 'No' on the top row and put numbers on the second row.

Letter	N	Y	L	X	S
Does this letter have rotational symmetry?	Yes				
How many lines of symmetry does this letter have?		1			

13.



Two parcels are weighed one at a time. The arrows show their masses in grams.

(a) Write down the masses of the parcels.

Answers: _____ g

_____ g

(b) What is the **difference** in the masses of the two parcels in ***kilograms****?*

Answer: _____ kg

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14. (i) Grace scored 30 out of 40 in a history test and 18 out of 25 in a geography test.
In which test did she achieve the higher percentage? **<u>You must show your workings</u>**.

Answer : Grace achieved the higher percentage in _____

(ii) Exactly 85% of pupils in Year 6 at Evensham School have school dinners.
Which of the following list could be the number of pupils in Year 6 at Evensham School?
Circle the <u>two</u> possible numbers.

20 25 30 35 40

14. (iii) The table below gives the percentages of students achieving the four possible grades in an examination.

Grade	A	B	C	D
Percentage (%)	35	20		

If the percentage of students achieving grade C is double the percentage achieving grade D, fill in the two missing numbers in the table.

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15. Write down a set of seven positive whole numbers with a median of 3 and a mode of 2.

Answer : _____ _____ _____ _____ _____ _____ _____

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16. The following table gives the numbers of different coloured discs in a bag.

Colour	Red	Green	Blue	Yellow
Number of discs	5	10	15	20

Dennis picks a disc at random from the bag. For each of the events A to C below, choose one of the following words to describe its probability.

Impossible	Unlikely	Evens	Likely	Certain

Event A : The disc is green or blue. Answer : _____

Event B : The disc is not blue. Answer : _____

Event C : The disc is not white. Answer : _____

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17. The 10 street lamps along one side of a straight piece of road are 80 metres apart. What is the distance between the first lamp and the last one?

Answer: _____m

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18. The full time score for a football match between team A and team B was a 2 – 2 draw. How many different possible half time scores were there?

Answer : _____ possible half time scores

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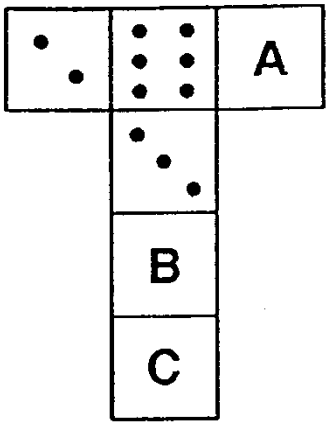
19. Peter is making dice. The diagram below shows the net of one of them. When the edges of the net are stuck together, the number of dots on opposite faces adds up to seven.



Write down the number of dots there should be on the faces marked A, B and C.

Answer A: _____

Answer B: _____

Answer C: _____

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20. A new office block is going to be 20 storeys high and all the storeys will be of the same height. So far 8 storeys have been built and they reach a height of 36 metres.

(a) What fraction, in its simplest form, of the block has been built?

Answer: _____

(b) What will be the block's total height?

Answer: _____ m

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21. A shopkeeper wishes to write the words

WINTER SALE

on the inside of his shop window so that people outside the shop can read it.

What should he write? Put your answer in the space below.

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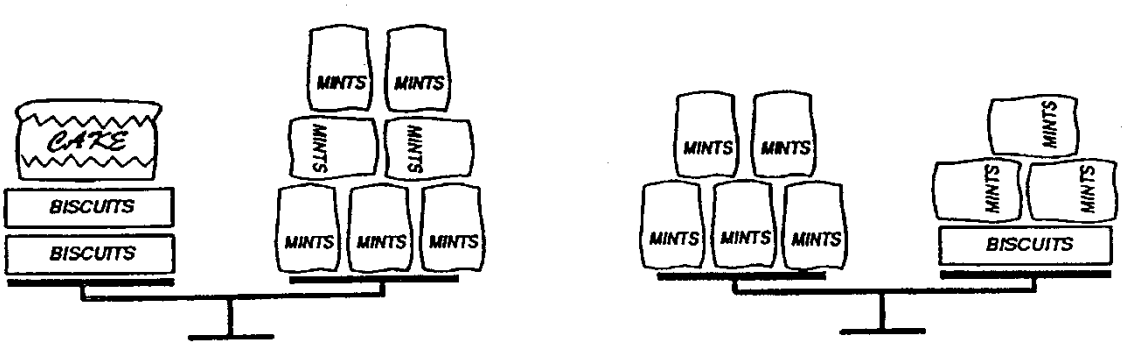
22. If each bag of mints weighs 250 g, how heavy is the cake?



Answer: _____

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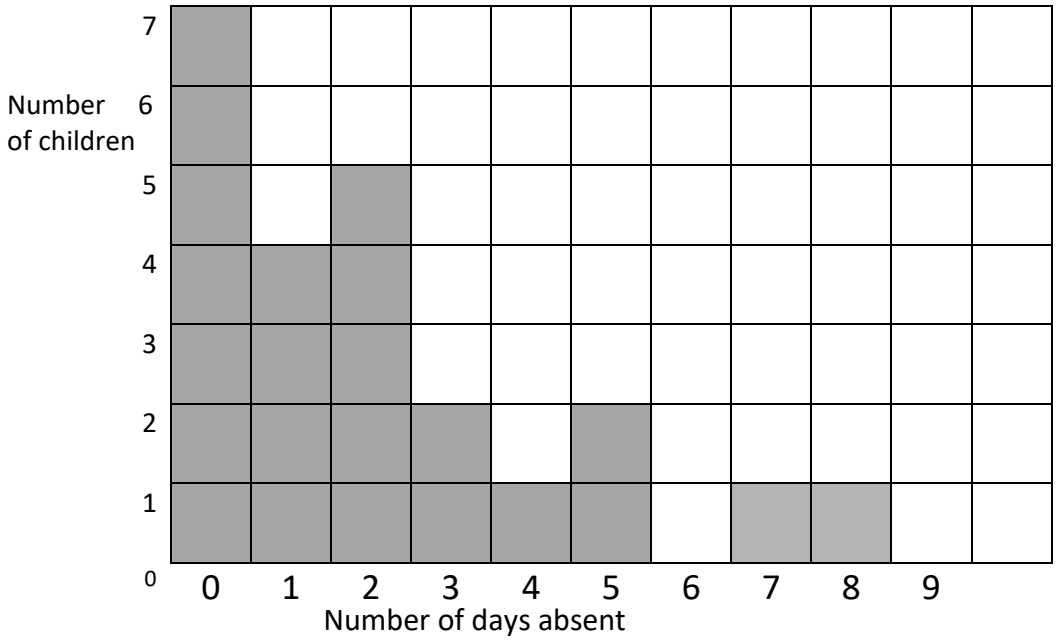
23. The number of days that children in a certain class were absent during January are represented in the frequency diagram below :



(a) What is the modal number of days absent?

Answer : _____ days

(b) How many children were absent for at least one day in January?

Answer : _____ children

(c) What was the total number of days of absence for children in the class?
Show your workings.

Answer : _____ days

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24. Ben plants a seed and an unusual plant starts to grow. Every morning Ben finds that the plant is one and a third times as tall as it was the morning before. On Tuesday morning the plant is 18 cm tall.

(a) How tall will the plant be on Thursday morning?

Answer: _____ cm

(b) How tall was the plant on Monday morning?

Answer: _____ cm

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25. Two trains are running, on separate tracks, round a model railway layout. One completes a circuit every 40 seconds and the other every 55 seconds. The trains start together at the station. How long, in minutes and seconds, will it be before they are at the station together again?

Answer: _____minutes _____ seconds

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26. Write down the next number in each of the following sequences :

(a) 8 11 16 23 _____

(b) 1200 600 200 50 _____

(c) 2 5 11 23 _____

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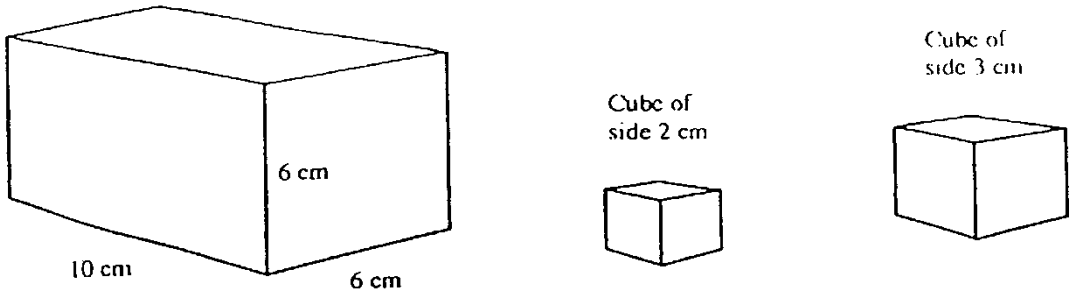
27. This is a picture of an open-topped box and two cubes.



(a) How many cubes of side 2 cm will fit inside the box?

Answer: _____

(b) How many cubes of side 3 cm will fit inside the box?

Answer: _____

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28. Raj has designed a number machine. Two numbers go in and an answer comes out. Two examples of what the machine does are given below

Fill in the missing numbers in the diagrams below.

Describe in words what the number machine does to the two numbers put into it.
