Reigate Grammar School

11+ Entrance Examination
January 2014

MATHEMATICS

Time allowed: 45 minutes

NAME………………………………………………………………………

- **Work through the paper carefully**
- **You do not have to finish everything**
- **Do not spend too much time on any single question**
- **Show any working in the spaces provided**
- **Use the blank left hand pages for rough work**

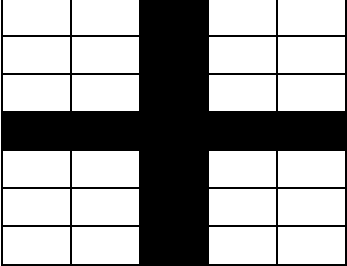| PAGE	1	2	3	4	5	6	7	8	TOTAL
MARK	18	22	18	9	14	9	5	5	100
MARK									

PAGE 1
ANSWER ALL QUESTIONS IN THE SPACES PROVIDED, SHOWING ANY NECESSARY WORKINGS

2014 + 998 =	2014 – 998 =	What is 2014 x 40?	DO NOT WRITE IN THIS BOX 1 1 1
Use your previous answer to write down 2014 x 4	Use these last two answers to write down 2014 x 44	Use your previous answer to write down 20.14 x 4.4	1 1 1
20.14 + 0.08 =	20.14 + 0.8 =	20.14 + 8 =	1 1 1
Given that 68 x 41 = 2788 What is 2788 ÷ 68 ? What is 278.8 ÷ 68? What is 0.2788 ÷ 410?	What is 400 x 13 ? What is 400 x 1.3? What is 400 x 0.13?	What is 9000 ÷ 100? What is 9000 ÷ 300? What is 9000 ÷ 600?	1 1 1 1 1 1 1 1 1

Which of these three is the largest and which is the smallest? 66% 0.607 $\frac{2}{3}$ Largest = Smallest =	What is 10% of £120? What is 5% of £120? What is $2^1/_2$% of £120? Use your answers to find $17^1/_2$% of £120	Find one sixth of 240 Use your answer to find five sixths of 240	DO NOT WRITE IN THIS BOX 1 1 1 1 1 1 1 1
Add together 20% of 40 $\frac{2}{5}$ of 20 and $\frac{2}{3}$ of 21	Sarah is 24 years old. Peter is half as old as Sarah. Mike is $\frac{2}{3}$ of Peter's age. What is their total age?	Write down a decimal between 81% and 84% Write down a fraction between 70% and 80%	1 1 1 1 1 1 1 1 1
What are the next two numbers in these sequences 1, 2, 4, 8, 16, ... ……and……. 1, 8, 27, 64, ... ……and……	Put these decimals in order, starting with the largest. 0.302, 0.032, 0.32	 What fraction of this flag is shaded? How many more rectangles need to be shaded to fill $\frac{3}{5}$ of the flag?	1 1 1 1 1

Work out $$\frac{2}{5} + \frac{2}{15}$$	Work out $$\frac{3}{7} - \frac{3}{5}$$	Add together the following, giving your answer as a DECIMAL $\frac{1}{5}$, 27% and 0.708	DO NOT WRITE IN THIS BOX 1 1 1 1 1 1 1
What is the biggest number that divides exactly into 63 , 84 and 105 ?	What is the smallest number that 3, 8, and 21 all divide into?	Find two numbers that have a difference of 6 and add up to 14 ……and…….	1 1 1
What is 0.4 written as a fraction? What is 0.04 written as a fraction? What is 0.404 written as a fraction?	What is $\frac{1}{8}$ written as a decimal? What is $\frac{1}{80}$ written as a decimal? What is $\frac{3}{80}$ written as a decimal?	Name the shapes below 	1 1 1 1 1 1 1 1

A survey is carried out to find out how many pets each student in year 6 has. The data is recorded in the table below.

Number of pets	Number of times	Total number of pets
0	25	0 x 25 =
1	31	
2	20	
3	8	
4	4	
5	2	

Complete the end column in the table

How many students are there in year 6?...

How many pets are there all together?...

Using the first two columns of the table, draw a bar chart to represent these results.

What are the missing numbers in the sums shown below?

			DO NOT WRITE IN THIS BOX
36 - …… = 19	…….. – 47 = 24	280 ÷ …….. = 14	**3**
(7 + ……..) x 5 = 65	…….. x ……. = 49	(34 - ……..) = 8 3	**3**
6 x …… - 2 = 40	……. ÷ 8 = 14	(……. + 4) = 3 7	**3**

Here are some number cards

| 1 | 4 | 3 | 9 |

You can use each card once to make the number 4139 like this

| 4 | 1 | 3 | 9 |

What is the biggest 4 digit number you can make with the four cards?...................

1

What is the smallest 4 digit number you can make with the four cards?...................

1

What is the biggest even number you can make with three of the cards?

…………………………………………..

1

Use some of the four number cards to make numbers as close as possible to the numbers given below

1

50 ⟶ [ ][ ]

1

400 ⟶ [ ][ ][ ]

The diagram below is a scale drawing of a T shaped path of area 45m^2
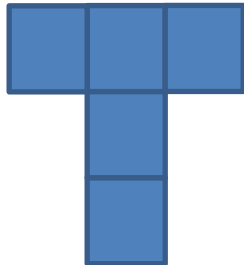
What is the area of each individual square?

....

What is the length of each side of each individual square?

....

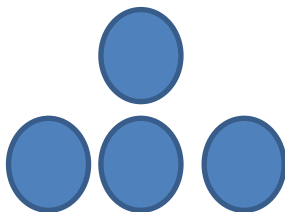What is the perimeter of the path?

....

A pattern is made using balls as shown here.
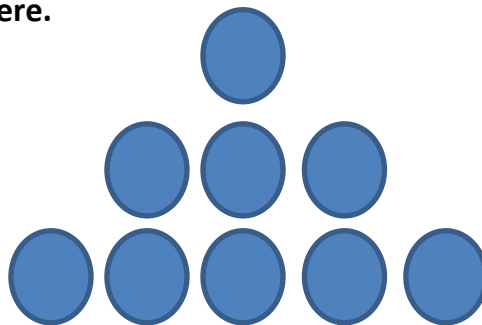
Pattern1   Pattern 2   Pattern 3

Copy and complete the table below.

Pattern	1	2	3	4	5
Number of Balls	1	4			

How many balls are there in the 10th pattern?

....

How many balls are there in the 100th pattern?

....
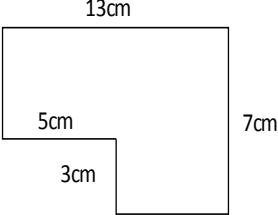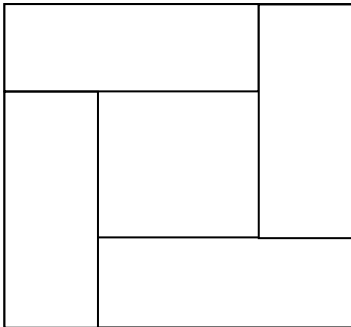
Which pattern has 121 balls?

....

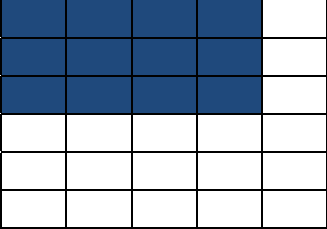|	DO NOT WRITE IN THIS BOX
Which of these is the smallest fraction? Circle your answer. $$\frac{1}{4} \quad \frac{1}{3} \quad \frac{5}{24} \quad \frac{4}{15}$$	**1**
Find the area of the following shape: 13cm 5cm 7cm 3cm	**1**
What is the 70th symbol in this endless string of symbols ***%$£*%$£*%$£...**	**1**
In the number 67379, what is the difference between the values of the two 7s?	**1**
Daisy travels on a National Express coach. **It goes at an average speed of 80km/h for 45 minutes.** **How far does Daisy travel?**	**1**

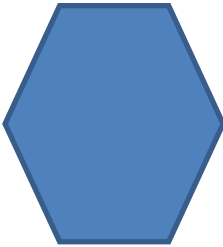|	DO NOT WRITE IN THIS BOX
If a two pence coin is tossed two times, the side facing up noted (heads or tails), how many possible outcomes are there?	**1**
In the diagram below, a square of side 13cm is divided into four identical rectangles and a square of side 9cm. *(Diagram not to scale)* **What are the side lengths of the rectangles**	**1**
Half the pieces of chalk in a box were white, the rest were coloured. A third of the coloured ones were blue, a quarter of the rest were red and the others were yellow. If there are 6 yellow ones, how many pieces of chalk were there altogether?	**1**
What is the sum of all the odd numbers less than 100?	**1**
A kitchen clock gains 1 minute every two hours. If I put the clock to the correct time right at 9am on Saturday, what time will it show when the right time is 5pm the following Monday?	**1**

END OF EXAMINATION

11+ Entrance Examination
January 2013

MATHEMATICS

Time allowed: 45 minutes

NAME……………………………………………………………………

- **Work through the paper carefully**
- ## **You do not have to finish everything**
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- **Use the blank left hand pages for rough work**

PAGE	1	2	3	4	5	6	7	8	TOTAL
MARK	18	22	18	9	14	9	5	5	100
MARK									

ANSWER ALL QUESTIONS IN THE SPACES PROVIDED, SHOWING ANY NECESSARY WORKINGS

			DO NOT WRITE IN THIS BOX
2030 + 997 =	2030 – 997 =	What is 2030 x 20?	1 1 1
Use your previous answer to write down 2030 x 5	Use these last two answers to write down 2030 x 25	Use your previous answer to write down 20.30 x 2.5	1 1 1
20.30 + 0.07 =	20.30 + 0.7 =	20.30 + 7 =	1 1 1
Given that 74 x 39 = 2886 What is 2886 ÷ 74 ? What is 288.6 ÷ 74? What is (28862886) ÷ 74?	What is 500 x 15 ? What is 500 x 1.5? What is 500 x 0.15?	What is 6000 ÷ 100? What is 6000 ÷ 200? What is 6000 ÷ 300?	1 1 1 1 1 1 1 1 1

			DO NOT WRITE IN THIS BOX
Which of these three is the largest and which is the smallest? 65% 0.605 $\underline{3}$ 5 Largest = Smallest =	What is 10% of £250? What is 5% of £250? What is $2^1/_2$% of £250? Use your answers to find $17^1/_2$% of £250	Find one seventh of 280 Use your answer to find four sevenths of 280	1 1 1 1 1 1 1 1
Add together 25% of 20 $\underline{1}$ of 30 5 and $\underline{2}$ of 18 3	Richard is 18 years old. Adam is half as old as Richard. Will is $\frac{2}{3}$ of Adam's age. What is their total age?	Write down a decimal between 90% and 95% Write down a fraction between 80% and 90%	1 1 1 1 1 1 1 1 1
What are the next two numbers in these sequences 2, 6, 12, 20, 30,…….. ……and……. 1, 4, 9, 16, 25, 36,….. ……and……	Put these decimals in order, starting with the largest. 0.201, 0.021, 0.21	 What fraction of this flag is shaded? How many more rectangles need to be shaded to fill $\frac{4}{5}$ of the flag?	1 1 1 1 1

Work out $\frac{2}{3} + \frac{2}{9}$	Work out $\frac{5}{8} - \frac{3}{5}$	Add together the following, giving your answer as a DECIMAL $\frac{2}{5}$, 35% and 0.604	DO NOT WRITE IN THIS BOX 1 1 1 1 1 1 1
What is the biggest number that divides exactly into 28 , 84 and 126 ?	What is the smallest number that 3, 5, and 12 all divide into?	Find two numbers that have a difference of 8 and add up to 18 ……and…….	1 1 1
What is 0.3 written as a fraction? What is 0.03 written as a fraction? What is 0.303 written as a fraction?	What is $\frac{1}{4}$ written as a decimal? What is $\frac{1}{40}$ written as a decimal? What is $\frac{7}{40}$ written as a decimal?	Name the shapes below	1 1 1 1 1 1 1 1

A teacher asks the students in year 6 how many people live in their homes. She records her results in the table below.

Number of people in house	Number of times	Total number of people
3	45	3 x 45 =135
4	25	
5	17	
6	10	
7	3	

Complete the end column in the table

How many students are there in year 6?...

How many people are there all together?...

Using the first two columns of the table, draw a bar chart to represent these results.
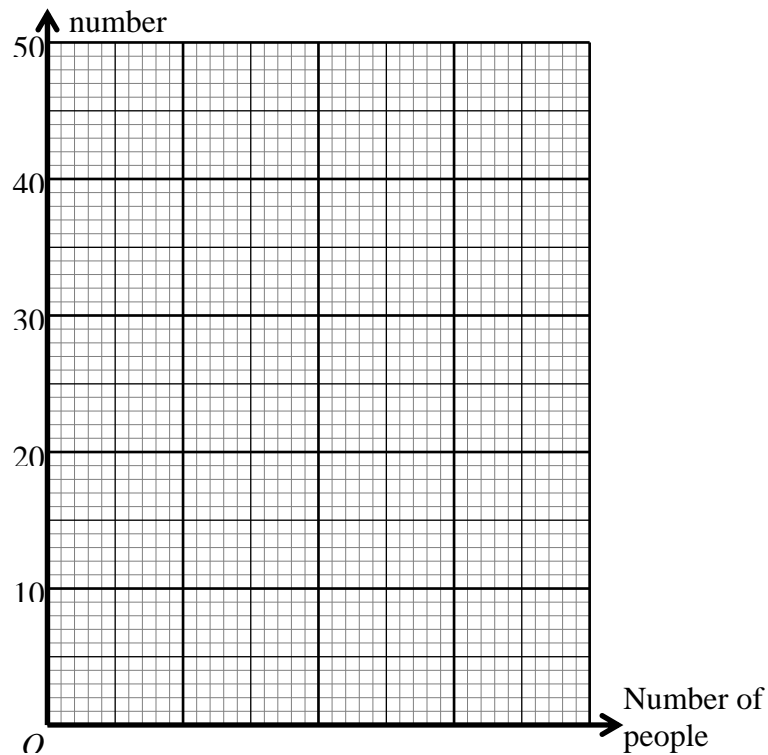
What are the missing numbers in the sums shown below?

			DO NOT WRITE IN THIS BOX
27 - …… = 19	…….. − 59 = 24	270 ÷ …….. = 15	3
(8 + ……..) x 4 = 88	…….. x ……. = 25	$\dfrac{(24 - ....)}{3} = 7$	3
3 x …… + 4 = 22	……. ÷ 7 = 13	$\dfrac{(....... + 4)}{8} = 3$	3

Here are some number cards

| 2 | 5 | 3 | 8 |

You can use each card once to make the number 2538 like this

| 2 | 5 | 3 | 8 |

What is the biggest 4 digit number you can make with the four cards?................... | 1

What is the smallest 4 digit number you can make with the four cards?................... | 1

What is the biggest even number you can make with three of the cards?

.... | 1

Use some of the four number cards to make numbers as close as possible to the numbers given below | 1

60 ⟶ ▢▢
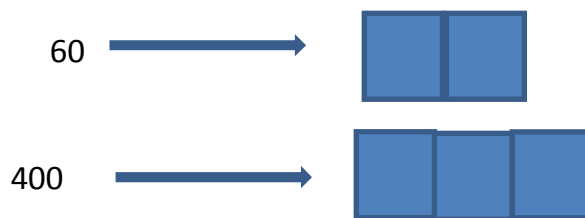
400 ⟶ ▢▢▢ | 1

The diagram below is a scale drawing of a Z shaped path of area 20m^2
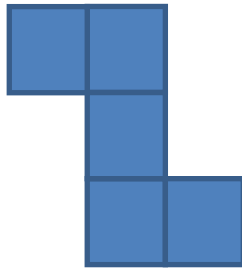
What is the area of each individual square?

....

What is the length of each side of each individual square?

....

What is the perimeter of the path?

....

	DO NOT WRITE IN THIS BOX
	1
	1
	1

A pattern is made using balls as shown here.
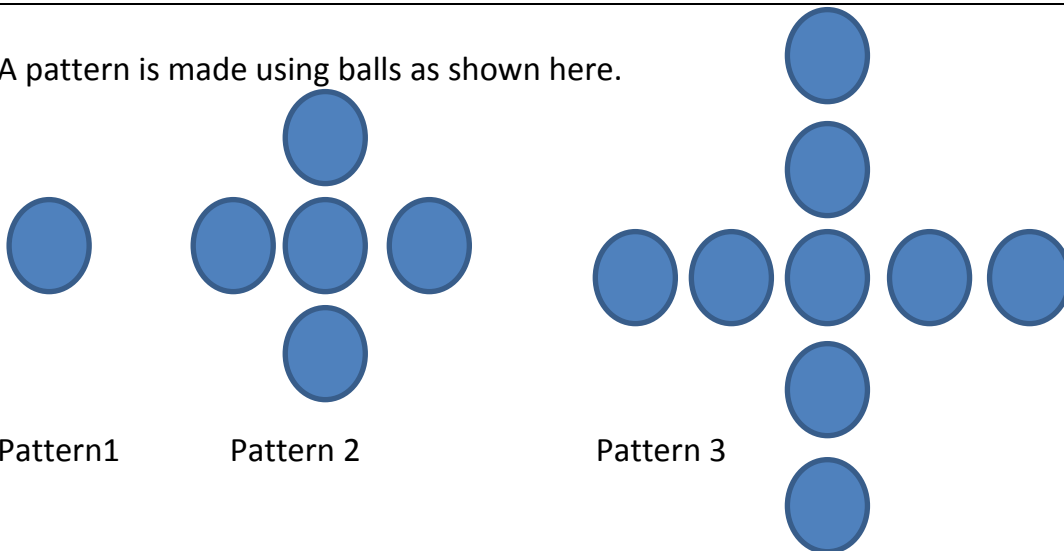
Pattern1   Pattern 2   Pattern 3

Copy and complete the table below.

Pattern	1	2	3	4	5
Number of Balls	1	5			

How many balls are there in the 10th pattern?

....

How many balls are there in the 100th pattern?

....

Which pattern has 117 balls?

....

DO NOT WRITE IN THIS BOX
1
1
1
1
1
1

	DO NOT WRITE IN THIS BOX
Which of these is the smallest fraction? Circle your answer. $$\frac{3}{4} \quad \frac{2}{3} \quad \frac{5}{12} \quad \frac{9}{14}$$	1
I have forgotten the last two digits of my PIN number, but know that the first two digits are 8 and 6 $$8 \; 6 \; * \; *$$ However, I know that my PIN number is divisible by 3, 4 and 5. What is my PIN number?	1
What is the 100th symbol in this endless string of symbols &£=&£=&£=&£=&£=	1
On holiday last year Phil bought 10 post cards at 45p each and 10 second class stamps at 27p each. How much change did he get from a £10 note?	1
Which of these fractions is the biggest? Circle your answer. $$\frac{1+2}{2+3} \quad \frac{2+4}{2+3} \quad \frac{1+2}{4+6} \quad \frac{3+4}{2+3} \quad \frac{1+4}{1+3}$$	1

	DO NOT WRITE IN THIS BOX
In a game of football the final score was 3-2. How many possible half time scores were there?	1
What is the sum of the first 40 whole numbers ?	1
How many numbers less than 100 are divisible by both 2 and 5?	1
Seven telegraph poles are equally spaced along a road. The distance between the first and the third pole is 268m. How far is it between the first and last pole?	1
A block of chocolate is divided between three friends. Paul gets half of it and Peter gets one third of it. Richard gets 100g of chocolate. How heavy was the bar originally?	1

END OF EXAMINATION

11+ Entrance Examination
January 2012

MATHEMATICS

Time allowed: 45 minutes

NAME……………………………………………………………………

- **Work through the paper carefully**
- ## You do not have to finish everything
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- **Use the blank left hand pages for rough work**

PAGE	1	2	3	4	5	6	7	TOTAL
MARK	18	24	18	8	14	8	10	100
MARK								

ANSWER ALL QUESTIONS IN THE SPACES PROVIDED, SHOWING ANY NECESSARY WORKINGS

2002 + 999 =	2002 – 999 =	What is 2002 x 10?	1 1 1
Use your previous answer to write down 2002 x 5	Use these last two answers to write down 2002 x 15	Use your previous answer to write down 20.02 x 1.5	1 1 1
20.02 + 0.07 =	20.02 + 0.7 =	20.02 + 7 =	1 1 1
Given that 35 x 17 = 595 What is 595 ÷ 17 ? What is 59500 ÷ 17? What is (595 + 595 + 595) ÷ 17?	What is 600 x 12 ? What is 600 x 1.2? What is 600 x 0.12?	What is 8000 ÷ 100? What is 8000 ÷ 400? What is 8000 ÷ 50?	1 1 1 1 1 1 1 1 1
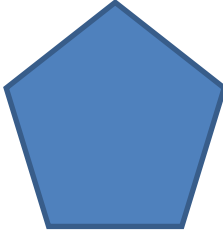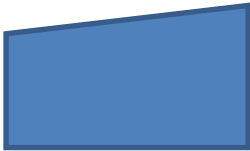
PAGE 2

Which of these three is the largest and which is the smallest? 70% 0.65 $\underline{4}$ 5 Largest = Smallest =	What is 10% of £600? What is 5% of £600? What is $2^1/_2$% of £600? Use your answers to find $17^1/_2$% of £600	Find one ninth of 360 Use your answer to find four ninths of 360	1 1 1 1 1 1 1 1

Add together
 	
     $\underline{1}$ of 24
      4
     $\underline{2}$ of 30
      5
and $\underline{1}$ of 15
      3
	Richard is 12 years old.
	
	Adam is twice as old as Richard.
	
	Will is $\frac{2}{3}$ of Adam's age.
	
	What is their total age?
		Write down a decimal between 75% and 80%
		
		Write down a fraction between 60% and 70%
			1
			1
			1
			1
			
			1
			1
			1
			
			1
			1

What are the next two numbers in these sequences 1, 4, 8, 13, 19,…….. ……and……. 1, 1, 2, 3, 5, 8,…..	Put these decimals in order, starting with the largest. 0.101, 0.011, 0.11	What fraction of this flag is shaded? How many more rectangles need to be shaded to fill $\frac{2}{3}$ of the	2 2 1 1 1

| ……and……		flag?	

PAGE 3

Work out $$\frac{1}{3}+\frac{5}{12}$$	Work out $$\frac{7}{15}-\frac{2}{5}$$	Add together the following, giving your answer as a DECIMAL 65%, 0.507 and $\frac{1}{4}$	 1 1 1 1 1 1 1
What is the biggest number that divides exactly into 60, 72 and 84?	What is the smallest number that 2, 3, and 8 all divide into?	Find two numbers that have a difference of 5 and add up to 19 ……and…….	1 1 1
What is 0.7 written as a fraction? What is 0.07 written as a fraction? What is 0.707 written as a fraction?	What is $\frac{1}{5}$ written as a decimal? What is $\frac{1}{50}$ written as a decimal? What is $\frac{3}{50}$ written as a decimal?	Name the shapes below	1 1 1 1 1 1 1 1

An ice cream company recently carried out a survey on 120 people to see which of their flavours were most popular. The results are shown in the pie chart below.

- VANILLA
- MINT
- STRAWBERRY
- CHOCOLATE
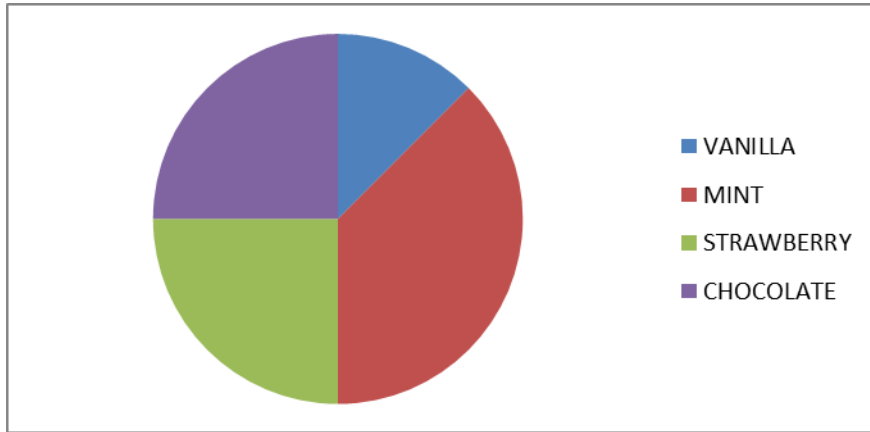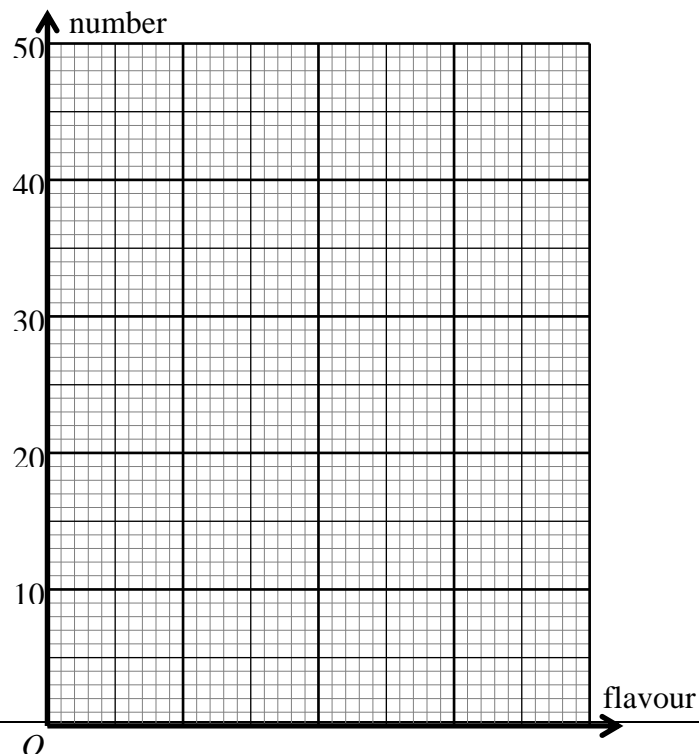
How many people liked each flavour?

VANILLA =……………..

MINT =……………..

STRAWBERRY =……………..

CHOCOLATE =……………..

1
1
1
1

Draw a bar chart to represent these results.

1
1
1
1

What are the missing numbers in the sums shown below?

			DO NOT WRITE IN THIS BOX
18 - …… = 13	…….. − 29 = 56	560 ÷ …….. = 14	**3**
(8 + ……..) x 5 = 85	…….. x ……. = 21	$\dfrac{(24 - ……..)}{4} = 4$	**3**
3 x …… + 7 = 22	……. ÷ 12 = 12	$\dfrac{(……. + 4)}{5} = 10$	**3**

Here are some number cards

1	7	3	5

You can use each card once to make the number 1735 like this

1	7	3	5

What is the biggest number you can make with the four cards?………………   **1**

Explain why you cannot make an even number

………………………………………..

………   **1**

………..

Use some of the four number cards to make numbers as close as possible to the numbers given below   **1**

50 ⟶ ▢▢

60 ⟶ ▢▢   **1**

4000 ⟶ ▢▢▢▢   **1**

These shapes can be folded to form cubical dice

Opposite faces of a dice always add up to 7.

What are the values of

A………………

B………………

C………………
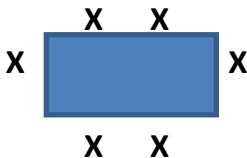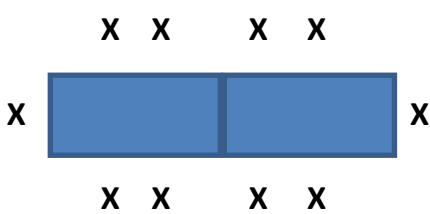
D………………

E………………

F………………

1
1
1
1
1
1

Six people can sit around a table as shown

Ten people can sit around two tables as shown

How many people can sit around three tables in the same way?……………

1
1

How many people can sit around ten tables in the same way?...................

PAGE 7

	DO NOT WRITE IN THIS BOX
Four lamp posts are in a straight line. The distance from each post to the next is 25m. What is the distance from the first post to the last?	1
What is two and thirty four hundredths when it is written as a decimal?	1
What is half of 999?	1
Which of these numbers is NOT a multiple of 3? 12 234 3456 45678 567890	1
What does 2 x 17 + 3 x 17 + 5 x 17 =?	1
Mary has three brothers and four sisters. If they, and Mary, all buy each other an Easter egg, how many eggs will be bought?	1
A transport company's vans each carry a maximum load of 12 tonnes. A firm needs to deliver 24 crates each weighing 5 tonnes. How many vans are needed?	1
What is the difference between the largest and smallest of these numbers 0.89 0.9 0.17 0.72 0.73	1
Three quarters of a local tennis club are girls. There are 20 boys in the club. How many girls are there?	1

A ball is dropped onto a hard surface and each time it bounces, it rebounds to one third of the height from which it fell. After the second bounce it rises 9cm. How high was it initially dropped from?	1

END OF EXAMINATION

Reigate Grammar School