## Reigate Grammar School



# 11+ Entrance Examination <br> January 2012 

## MATHEMATICS

Time allowed: 45 minutes

NAME. $\qquad$

- 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 | TOTAL |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| MARK | 18 | 24 | 18 | 8 | 14 | 8 | 10 | 100 |
| MARK |  |  |  |  |  |  |  |  |

## PAGE 1

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

| $2002+999=$ | 2002-999 = | What is $2002 \times 10$ ? | Do $\substack{\text { Not } \\ \text { WRIT } \\ \text { IHIS } \\ \text { HHIs } \\ \text { Box }}$ 1 1 1 1 |
| :---: | :---: | :---: | :---: |
| Use your previous answer to write down $2002 \times 5$ | Use these last two answers to write down $2002 \times 15$ | Use your previous answer to write down $20.02 \times 1.5$ | 1 <br> 1 <br> 1 |
| $20.02+0.07=$ | $20.02+0.7=$ | $20.02+7=$ | 1 <br> 1 <br> 1 |
| Given that $35 \times 17=$ 595 | What is $600 \times 12$ ? | What is $\mathbf{8 0 0 0} \div \mathbf{1 0 0}$ ? | 1 1 1 |
| What is $59500 \div \mathbf{1 7}$ ? | What is $600 \times 1.2$ ? | What is $8000 \div 400$ ? | $\begin{aligned} & 1 \\ & 1 \\ & 1 \end{aligned}$ |
| What is $\begin{aligned} & (595+595+595) \div \\ & 17 ? \end{aligned}$ | What is $600 \times 0.12$ ? | What is $8000 \div 50$ ? | $\begin{aligned} & 1 \\ & 1 \\ & 1 \end{aligned}$ |

$\square$
PAGE 2

| Which of these three is the largest and which is the smallest? $70 \% \quad 0.65 \quad \frac{4}{5}$ <br> Largest $=$ <br> Smallest $=$ | What is $\mathbf{1 0 \%}$ of $£ 600$ ? <br> What is $5 \%$ of $£ 600$ ? <br> What is $\mathbf{2}^{1} / 2 \%$ of £600? <br> Use your answers to find $17^{1} / 2 \%$ of $£ 600$ | Find one ninth of $\mathbf{3 6 0}$ <br> Use your answer to find four ninths of $\mathbf{3 6 0}$ |  |
| :---: | :---: | :---: | :---: |
|  | Richard is $\mathbf{1 2}$ years old. <br> Adam is twice as old as Richard. <br> Will is $\frac{2}{3}$ of Adam's age. <br> What is their total age? | Write down a decimal between $75 \%$ and $80 \%$ <br> Write down a fraction between $60 \%$ and $70 \%$ | $\begin{aligned} & 1 \\ & 1 \\ & 1 \\ & 1 \\ & 1 \\ & 1 \\ & 1 \\ & 1 \\ & 1 \end{aligned}$ |
| What are the next two numbers in these sequences $1,4,8,13,19, \ldots . . . .$ $\qquad$ and. $\qquad$ $1,1,2,3,5,8, \ldots . .$ | Put these decimals in order, starting with the largest. $0.101,0.011,0.11$ | What fraction of this flag is shaded? <br> How many more rectangles need to be | 2 2 1 1 1 1 |


| $\ldots . .$. and...... |  | shaded to fill $\frac{2}{3}$ of the <br> 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 $65 \%, 0.507 \text { and } \frac{1}{4}$ |  |
| :---: | :---: | :---: | :---: |
| 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 | 1 <br> 1 <br> 1 |
| What is 0.7 written as a fraction? <br> What is 0.07 written as a fraction? <br> What is 0.707 written as a fraction? | What is $\frac{1}{5}$ written as a decimal? <br> What is $\frac{1}{50}$ written as a decimal? <br> What is $\frac{3}{50}$ written as a decimal? | Name the shapes below | $\begin{aligned} & 1 \\ & 1 \\ & 1 \\ & 1 \\ & 1 \\ & 1 \\ & 1 \\ & 1 \end{aligned}$ |


|  |  |  |
| :--- | :--- | :--- | :--- |

## PAGE 4

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.


How many people liked each flavour?

$$
\begin{array}{c|l}
\text { VANILLA }=. . . . . . . . . . . . . . . . . ~ & 1 \\
\text { MINT }=\ldots . . . . . . . . . . . . . . . . & \\
\text { STRAWBERRY }=. . . . . . . . . . . . . & 1 \\
\text { CHOCOLATE }=. . . . . . . . . . . . . . . ~ & 1
\end{array}
$$

Draw a bar chart to represent these results.

$\square$
PAGE 5
What are the missing numbers in the sums shown below?



PAGE 6


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

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

## PAGE 7

| Four lamp posts are in a straight line. The distance from each post to the next is 25 m . What is the distance from the first post to the last? | Do Not WNIT NHIN THIs Box 1 |
| :---: | :---: |
| What is two and thirty four hundredths when it is written as a decimal? |  |
| What is half of 999? |  |
| Which of these numbers is NOT a multiple of 3? |  |
| $\begin{array}{llllll}12 & 234 & 3456 & 45678 & 567890\end{array}$ | 1 |
| What does $2 \times 17+3 \times 17+5 \times 17=$ ? |  |
| 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 | 1 |
| $\begin{array}{lllll}0.89 & 0.9 & 0.17 & 0.72 & 0.73\end{array}$ |  |
| Three quarters of a local tennis club are girls. There are $\mathbf{2 0}$ boys in the club. How many girls are there? | 1 |


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

END OF EXAMINATION

## Reigate Grammar School



## II+ Entrance Examination January 2011 MATHEMATICS

Time allowed: 45 minutes

NAME $\qquad$

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| PAGE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | TOTAL |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| MARK | 17 | 20 | 21 | 6 | 12 | 15 | 9 | 100 |
| MARK |  |  |  |  |  |  |  |  |

Complete each of the following, showing your working in the space provided

| $2011+999=$ | $2011-999=$ |  | Do not <br> write <br> in this <br> box |
| :--- | :--- | :--- | :---: |




George carries out a survey at school to find out how his school friends travel to school. He represents this data on the bar chart shown below.

(a) Fill in the table below

| Method of Transport | Number |
| :---: | :---: |
| CAR |  |
| BUS |  |
| WALK |  |
| BIKE |  |

(b) How many people were in the survey?
(c) In an attempt to improve the environment children are encouraged to find a "greener" way to get to school. A third of those who travel by car decide to walk and 3 move from bus to walking too. How many now walk?


In the following questions fill in the missing number. You can only use WHOLE numbers.



Tom has a number machine which multiplies by 5 and then adds 6 When he puts 3 in the answer comes out as 21


Sarah then changes the boxes around so that when she puts in $\mathbf{3}$ her answer is 45


They both put the same number into their machines.
If 41 comes out of Tom's machine what comes out of Sarah's? $\qquad$

If 55 comes out of Sarah's machine what comes out of Tom's?

The number pattern below is known as Pascal's Triangle. Each number is the sum of the two numbers directly above it.

| Row 1 |  | 1 |  |  |
| :---: | :---: | :---: | :---: | :---: |
| Row 2 |  |  |  | 1 |
| Row 3 |  |  |  | 2 |
|  |  |  |  | 3 |
|  |  | 1 | 4 | 6 |
|  |  |  |  |  |

Complete the table below

| ROW | TOTAL |  |
| :---: | :---: | :---: |
| $\mathbf{1}$ | $\mathbf{1}$ |  |
| 2 | $\mathbf{2}$ | $\mathbf{2}$ |
| $\mathbf{3}$ | $\mathbf{4}$ | $\mathbf{2 x} \mathbf{2}$ |
| $\mathbf{4}$ |  | $\mathbf{2 x 2 \times 2}$ |
| $\mathbf{5}$ |  |  |
| $\mathbf{6}$ |  |  |
| $\mathbf{7}$ |  |  |

What will be the total in row 10 ?
$\qquad$


## REIGATE GRAMMAR SCHOOL

## I I+ Mathematics paper

## January 2010

Time allowed: 45 minutes

NAME $\qquad$

- Work through the paper carefully
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| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| MARK | 16 | 27 | 20 | 8 | 11 | 8 | 10 | 100 |
| MARK |  |  |  |  |  |  |  |  |

Complete each of the following, showing your working in the space provided

| $2010+997=$ | 2010-997 = | $\mathbf{2 0 1 0} \times 12=$ | $\substack{\text { Do not } \\ \text { write } \\ \text { in this } \\ \text { box }}$ 1 1 1 1 |
| :---: | :---: | :---: | :---: |
| Use your previous answer to find $20.1 \times 1.2=$ | $2010 \div 6=$ | Use your previous answer to find $20.1 \div 6=$ | 1 <br> 1 <br> 1 |
| $32.01+0.09=$ | $32.01+0.9=$ | $32.01+9=$ | 1 <br> 1 <br> 1 |
| Given that $37 \times 84=3108$ | Given that $799 \div 17=47$ | Given that $34567-13579=20988$ <br> What is $13579+20988=$ |  |
| Use this answer to find $3108 \div 37=$ <br> and $3108 \div 8.4=$ | Use this answer to find $799 \div 47=$ |  |  |
| and $31083108 \div 84=$ | and $79900 \div 47=$ | and $34.567-20.988=$ | 1 <br> 1 <br> 1 |



\begin{tabular}{|c|c|c|c|}
\hline \begin{tabular}{l}
A ruler costs \(x\) pence and a pen costs \(y\) pence. Which of the statements below represents the cost of 4 pens and 6 rulers? \\
Circle your answer
\[
\begin{gathered}
10 x y \\
6 x+4 y \\
6 y+4 x \\
10(x+y) \\
\hline
\end{gathered}
\]
\end{tabular} \& When you add up two numbers you get 35, but when you subtract the two numbers you get 13 . What are the two numbers? \& Work out, simplifying your answer if possible
\[
\frac{3}{8}-\frac{1}{24}
\] \& \begin{tabular}{l}
Do not write in this box \\
1 \\
2 \\
3
\end{tabular} \\
\hline Change these fractions into decimals.
\[
\frac{1}{5}=\ldots \ldots \ldots \ldots
\]
\[
\frac{1}{500}=
\]
\[
\frac{7}{500}=\ldots \ldots \ldots \ldots
\] \& \begin{tabular}{l}
In the first week of th cinema sells 2140 tick In the second week it the first week. \\
In the third week it se second week. \\
How many tickets are
\end{tabular} \& \begin{tabular}{l}
screening of a new film a ts. ells 320 less tickets than \\
ls 210 less tickets than the sold over the three weeks?
\end{tabular} \& 3

3 <br>

\hline A boy has to be in school by 8.35am. It takes him 25 minutes to get washed and dressed, $\mathbf{1 5}$ minutes to eat breakfast and then 18 minutes to walk to school. What is the latest time that he should get out of bed? \& | Here are some numbe |
| :--- |
| 7 |
| Using each card once possible even number |
| Using each card once possible multiple of 6 |
| Using each card once close as possible to 40 | \& | cards |
| :--- |
| 2 |
| 3 |
| only make the smallest $\qquad$ |
| nly make the smallest $\qquad$ |
| nly make a number as 0 | \& 2

2
2
2 <br>
\hline
\end{tabular}



In the following questions fill in the missing number. You can only use WHOLE numbers and you CANNOT USE the number1.

| $\begin{array}{r} 1 \ldots . .6 \\ +258 \\ \hline 434 \end{array}$ | $\begin{array}{r} 8 \ldots . .6 \\ -397 \\ \hline 459 \end{array}$ | $\frac{\ldots . .-6}{6}=6$ | Do Dot write wn inis this box 3 |
| :---: | :---: | :---: | :---: |
| $\underset{\ldots .+5}{40}=5$ | $(\ldots \ldots+7) \div 9=9$ | $4 \times \ldots .$. | 3 |


| A |  |  |  |  |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | $\mathbf{B}$ |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |

On the axes above the point $A$ is $(2,1)$.
(a) What are the coordinates of $B$ ?

$$
\text { Answer }=(\ldots \ldots \ldots \ldots . . .)^{2}
$$

(b) Mark on the point $\mathbf{C}$ which has coordinates (6,4)
(c) If a fourth point $D$ is plotted and $A B C D$ makes a rectangle, what are the coordinates of $D$ ?

$$
\text { Answer = }(\ldots \ldots . . . . . . . . .)
$$



Tom and Sarah are playing with number machines.
Tom's machine adds 4 to any number put into it and then multiplies the result by 5


When he puts 2 in, out comes 30
Fill in the missing numbers for Tom's machine


Sarah's machine multiplies by 5 and then adds 4


If Sarah puts in the number 2, what number comes out? $\qquad$
If Sarah puts in the number 7, what number comes out? $\qquad$

They both put the same number into their machines.
If 45 comes out of Tom's machine what comes out of Sarah's? $\qquad$

If 19 comes out of Sarah's machine what comes out of Tom's?

