

Name \_\_\_\_\_

Candidate Number \_\_\_\_\_

Room Number \_\_\_\_\_

# WITHINGTON GIRLS' SCHOOL

## ENTRANCE EXAMINATION 2019

### MATHEMATICS

### PAPER 1

TIME: 30 MINUTES

- Try to answer all the questions.
- Write your working and your answer in the space provided after each question.
- If you cannot answer a question, leave it and go on to the next one.
- Use any time you have left to check your answers and go back to any questions you have left out.

**CALCULATORS MUST NOT BE USED**

PAPER 1 TOTAL	
Marker's Initials	
Checker's Initials	

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**Section A**

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<p>1. Work out <math>727 + 482</math></p> <p style="text-align: right;">_____</p>	<p>2. Work out <math>308 - 197</math></p> <p style="text-align: right;">_____</p>	<p>1</p> <p>1</p>
<p>3. Work out <math>53 \times 84</math></p> <p style="text-align: right;">_____</p>	<p>4. Work out <math>4392 \div 6</math></p> <p style="text-align: right;">_____</p>	<p>1</p> <p>1</p>
<p>5. Round 278 to the nearest 10</p> <p style="text-align: right;">_____</p>	<p>6. Work out <math>152 + 45 - 52 + 16</math></p> <p style="text-align: right;">_____</p>	<p>1</p> <p>1</p>
<p>7. Write these six numbers in order from smallest to largest</p> <p style="text-align: center;"><math>7 \quad -2 \quad 0 \quad -3 \quad 11 \quad -8</math></p> <p style="text-align: right;">_____</p>		<p>1</p>
<p>8. Write down all the factors of 15</p> <p style="text-align: right;">_____</p>		<p>1</p>
<p>9. Fill in the box</p> <p style="text-align: center;"><math>3 \times \square - 2 = 19</math></p>		<p>1</p>
<p>10. <math>45 \times 52 = 2340</math>. What is <math>234\,000 \div 520</math>?</p> <p style="text-align: right;">_____</p>		<p>1</p>

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**Section B**


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In this section any fractions should be written in their **simplest form**.  
For example,  $\frac{1}{4}$  is simpler than  $\frac{2}{8}$  and the mixed number  $1\frac{1}{4}$  is simpler than  $\frac{5}{4}$ .

<p>1. Work out <math>5\frac{1}{3} + 2\frac{1}{12}</math></p> <p style="text-align: right;">_____</p>	<p>2. Work out <math>8\frac{1}{4} - 1\frac{3}{4}</math></p> <p style="text-align: right;">_____</p>	<p>1</p> <p>1</p>
<p>3. Write <math>\frac{17}{14}</math> as a mixed number</p> <p style="text-align: right;">_____</p>	<p>4. Work out <math>\frac{6}{7}</math> of 42</p> <p style="text-align: right;">_____</p>	<p>1</p> <p>1</p>
<p>5. What is 36% of 50?</p> <p style="text-align: right;">_____</p>	<p>6. How many quarters are there in <math>2\frac{1}{2}</math>?</p> <p style="text-align: right;">_____</p>	<p>1</p> <p>1</p>
<p>7. Circle the largest fraction</p> <p style="text-align: center;"><math>\frac{4}{7}</math>    <math>\frac{7}{10}</math>    <math>\frac{6}{9}</math>    <math>\frac{5}{8}</math></p>		<p>1</p>
<p>8. Write 0.45 as a fraction</p> <p style="text-align: right;">_____</p>		<p>1</p>
<p>9. What number goes in the box?</p> <p style="text-align: center;"><math>\frac{3}{\square}</math> of 56 = 21</p>		<p>1</p>
<p>10. What is 60% of <math>\frac{2}{5}</math> of 75?</p> <p style="text-align: right;">_____</p>		<p>1</p>

**Section C**

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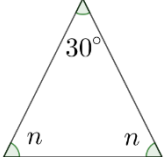
<p>1. Katie is 1.36 metres tall. Write her height in cm.</p> <p style="text-align: right;">_____ cm</p>	<p>2. Work out <math>0.23 \times 200</math></p> <p style="text-align: right;">_____</p>	<p>1</p> <p>1</p>				
<p>3. Find one tenth of 17.1.</p> <p style="text-align: right;">_____</p>	<p>4. Write the numbers in order from smallest to largest.</p> <p style="text-align: center;">7.03    7.21    7.2    7.007</p> <p style="text-align: right;">_____</p>	<p>1</p> <p>1</p>				
<p>5. Work out <math>15.41 + 0.023</math></p> <p style="text-align: right;">_____</p>	<p>6. A ribbon of length 87 cm is cut into 30 equal pieces. How long is each piece?</p> <p style="text-align: right;">_____ cm</p>	<p>1</p> <p>1</p>				
<p>7. Circle the calculation which gives the largest answer</p> <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;"><math>30 \times 0.6</math></td> <td style="text-align: center;"><math>300 \times 0.6</math></td> </tr> <tr> <td style="text-align: center;"><math>30 \div 0.6</math></td> <td style="text-align: center;"><math>30 \div 0.06</math></td> </tr> </table>		$30 \times 0.6$	$300 \times 0.6$	$30 \div 0.6$	$30 \div 0.06$	<p>1</p>
$30 \times 0.6$	$300 \times 0.6$					
$30 \div 0.6$	$30 \div 0.06$					
<p>8. Find the value indicated by the arrow.</p> <div style="text-align: center;">  </div> <p style="text-align: right;">_____</p>		<p>1</p>				
<p>9. Find the total weight of 6 boxes, each weighing 1.3 kg.</p> <p style="text-align: right;">_____ kg</p>		<p>1</p>				
<p>10. The perimeter of a square is 2.8 cm. Find its area.</p> <p style="text-align: right;">_____ cm<sup>2</sup></p>		<p>1</p>				

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**Section D**

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In this section, write down the number that ***n*** stands for.

<p>1. <b><i>n</i></b> is the number where <math>n: 8 = 9: 12</math></p> <p style="text-align: right;"><b><i>n</i></b> = _____</p>	1
<p>2. <b><i>n</i></b> is the number of minutes between 08:30 and 09:25</p> <p style="text-align: right;"><b><i>n</i></b> = _____</p>	1
<p>3. <b><i>n</i></b> is the largest multiple of 7 which is less than 100</p> <p style="text-align: right;"><b><i>n</i></b> = _____</p>	1
<p>4. <b><i>n</i></b> is the missing input</p> <p style="text-align: center;"> <math>n \longrightarrow \boxed{\times 3} \longrightarrow \boxed{+4} \longrightarrow 34</math> </p> <p style="text-align: right;"><b><i>n</i></b> = _____</p>	1
<p>5. <b><i>n</i></b> is 12 less than 7</p> <p style="text-align: right;"><b><i>n</i></b> = _____</p>	1
<p>6. <b><i>n</i></b> is a square number between 40 and 50</p> <p style="text-align: right;"><b><i>n</i></b> = _____</p>	1
<p>7. <b><i>n</i></b> is the missing number</p> <p style="text-align: center;"> <math display="block">\begin{array}{r} 423 \\ 3 \overline{) 12n9} \end{array}</math> </p> <p style="text-align: right;"><b><i>n</i></b> = _____</p>	1
<p>8. <b><i>n</i></b> is the angle</p> <p style="text-align: center;">  </p> <p style="text-align: right;"><b><i>n</i></b> = _____</p>	1
<p>9. <b><i>n</i></b> is the smallest odd number which can be made using all the digits 3, 7, 2, 8 once</p> <p style="text-align: right;"><b><i>n</i></b> = _____</p>	1
<p>10. <b><i>n</i></b> is the number where</p> <p style="text-align: center;"><math>3 \times n \times 11 = 66</math></p> <p style="text-align: right;"><b><i>n</i></b> = _____</p>	1

**Section E**

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1. In pets club there are 4 guinea pigs and 6 hamsters.

(a) Write the ratio of guinea pigs to hamsters in its simplest form.

\_\_\_\_\_ 1

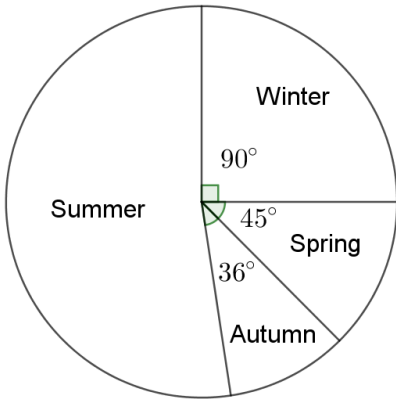
(b) What fraction of the animals are hamsters?

\_\_\_\_\_ 1

(c) Hamsters weigh approximately 125g and guinea pigs weigh approximately 0.75kg. Write the ratio of the mass of a hamster to the mass of guinea pig in its simplest form.

\_\_\_\_\_ 1

2. Year 13 are asked for their favourite season. The results are shown in the pie chart. 30 students chose Winter.



(a) How many students chose Spring?

\_\_\_\_\_ 1

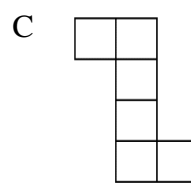
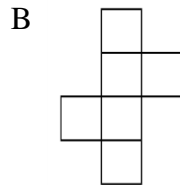
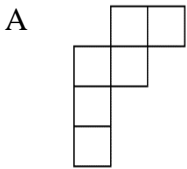
(b) What fraction of the students chose Autumn?

\_\_\_\_\_ 1

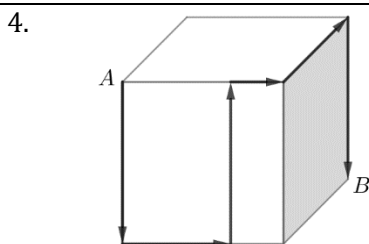
(c) How many students were asked altogether?

\_\_\_\_\_ 1

3. Which of these nets make a cube?



\_\_\_\_\_ 2



The diagram shows a cube of side 18 cm. A spider walks across the cube's surface from A to B, following the path of the arrows. How far does it walk?

\_\_\_\_\_ cm

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