| name | | |
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WITHINGTON GIRLS' SCHOOL

ENTRANCE EXAMINATION 2016 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 | |

| <u>Secti</u> | on A | | | Do not write in this margin |
|--------------|--|-------------------------------|--|--------------------------------------|
| 1. | Work out 453+392 | 2. Work out 632–351 | | |
| | | | | 1 |
| | | | | 1 |
| | | | | |
| 3. | Work out 47 × 34 | 4. Work out 384 ÷ 8 | | |
| | | | | 1 |
| | | | | 1 |
| 5. | Round 575 to the nearest 100 | 6. Work out 37 + 42 + 18 + 13 | | 1 |
| | | | | 1 |
| | | | | |
| 7. | . Write down the next number in this sequence | | | |
| | 3, 6, 12, 24, 48, | | | 1 |
| 8. | Order the numbers from lowest to highest | | | |
| | 8 -7 14 | 3 -3 1 | | |
| | | | | 1 |
| 9. | What number goes in the box? | | | |
| | 8 × 9 = | × 11 + 6 | | 1 |
| 10. | $18 \times 15 = 270$. What is $2700 \div 180$? | | | |
| | | | | 1 |
| | | | | |

Section B

Do not write in this margin

1

1

1

1

1

1

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

1. Work out $2\frac{1}{5} + 3\frac{3}{10}$

- 2. Work out $6\frac{1}{2} 2\frac{3}{4}$
- 3. Write $\frac{35}{4}$ as a mixed number
- 4. Work out $\frac{3}{11}$ of 66
- 5. What is 30% of 80? 6. Work out $9 \div 1\frac{1}{2}$
- 7. Circle the odd one out
- $-\frac{3}{4}$ $\frac{15}{8}$ $\frac{7}{4}$ $\frac{2}{11}$
- 8. How many fifths are there in $3\frac{3}{5}$?
- _____1
- 9. What number goes in the box?

$$\frac{3}{}$$
 of 63 = 27

10. What is one third of two fifths of 60?

_____ 1

| Sect | ion C | | | write in this margin |
|------|---|--------|---|----------------------------|
| 1. | How many centimetres are in 1·3 metres? | 2. | Work out 4·2 ÷ 0·2 | |
| | | | | 1 |
| | | | | 1 |
| | | | | |
| 3. | Which symbol goes in the box >, < or =? | 4. | Write the following in size order. Start with the smallest. | |
| | 0.15×100 182÷ 10 | | $45\% \qquad 0.35 \qquad \frac{4}{10}$ | 1 |
| | | | 10 | 1 |
| | | | | |
| 5. | $2.4 \times 23 = 55.2$. What is 0.24×2.3 | 6. | Work out 12⋅35 × 3 | 1 |
| | | | | 1 |
| | | | | |
| 7. | Alice earns £5.12 per hour. She works 8 hours, ho | w mu | ch does she earn? | |
| | | | £ | 1 |
| | | | | |
| 8. | What number is half way between 3.5 and 6.9 | | | |
| | | | | 1 |
| 9. | A string measures 13.2 cm. It is cut into three piece. What is the length of the third piece? | es. Tw | vo of the pieces measure 5.3 cm and 3.8 cm. | |
| | | | cm | 1 |
| | | | | |
| 10. | A rectangle has a perimeter of 37 cm. The length is | s 11.2 | cm. What is the width? | |
| | | | | 1 |
| | | | cm | |
| | | | | |

Section D

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

Do not write in this margin

1. *n* is the number of minutes between 9:40am and 11:35am

n =_____ 1

2. n is the value when 24 is decreased by $\frac{1}{8}$

n =_____ 1

3. **n** is the number where $5 \times n + 8 = 63$

n =_____ 1

4. **n** is the next number in the sequence

5 7 12

19

31

2

n =_____ 1

5. **n** is the number where $\frac{12}{n} = \frac{n}{3}$

n =_____

1

1

6. n is the number of grams in 2·3 kg

n =_____

7. n is the number where $n \times 2 = 3.52$

8. **n** is the median of 3 2 7 5 1 4 8

n =_____ 1

9. **n** is the sum of all the factors of 10

 $n = _{1}$

10. **n** is 20 less than 7

 $n = _{1}$

Section E

Do not write in this margin

A bag contains only red, green and blue counters. 1.

There are 24 counters in total.

 $\frac{1}{6}$ of the counters are red. $\frac{1}{4}$ of the rest are green.

How many counters are green?

1

(b) How many counters are blue?

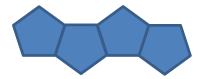
1

2. Pentagonal tables are joined together to make the following pattern.









(a) Complete the table

| Number of pentagons | Perimeter |
|---------------------|-----------|
| 1 | 5 |
| 2 | 8 |
| 3 | |
| 4 | |

1

(b) What would be the perimeter of 7 pentagonal tables arranged in this way?

1

(c) One arrangement has a perimeter of 53. How many pentagons are in the pattern?

1

| | | Do not write in this margin | |
|----|--|--------------------------------------|--|
| 3. | Here are the top results from the Women's 100m Hurdles at the London 2012 Olympics. The times are given in seconds. | | |
| | Lolo Jones 12.58 (a) Who won the gold medal? Sally Pearson 12.35 Jessica Zelinka 12.69 Dawn Harper 12.37 Nevin Yanit 12.58 | 1 | |
| | (b) How much faster was Dawn Harper than Nevin Yanit?seconds | 1 | |
| 4. | What percentage of each shape is shaded? | | |
| | | 1 | |
| | % | | |
| 5. | The nonagon is split into 9 identical triangles. | | |
| | (a) What is the value of x? | 1 | |
| | (a) What is the value of y ? | 1 | |
| | | | |
| | | | |
| | | | |