Name:

OUNDLE
School

Junior Entrance Examination 2013
Second Form Entry

Mathematics

Section A: 30 minutes **No calculators allowed**

- Write ALL your working and answers on this paper. Show enough working on each question to make it clear how you reached your answer. **Underline your answers.**

- Do not spend too long working on any particular question. Do not worry if you do not manage to complete every question in each section.

- You may work in pen or pencil.

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Section A NO CALCULATORS

1. Work out:

(a) $691 + 39$

(b) 68×19

(c) $11696 \div 8$

(d) 80% of 80

(e) $\frac{7}{12} + \frac{3}{8}$

(f) $4\frac{1}{6} \div 1\frac{2}{3}$

2. Work out the following:

(a) $3 - 10 =$

(b) $3 \times (-10) =$

(c) $4 - 5 + 6 - 7 =$

(d) $(-3) \times (-4) =$

3. Fill in the gaps with $+ \ - \ \div \ \times \ (\quad)$ to make these statements work:

(a) $5 \quad 3 \quad 9 = 6$

(b) $5 \quad 3 \quad 9 = 32$

(c) $9 \quad 3 \quad 3 = 8$

4. Complete the following table:

Fraction (in its simplest form)	Percentage	Decimal
$\frac{1}{5}$		0.2
	65%	
$1\frac{3}{4}$		
		0.003

5. My train was scheduled to leave at 16:20 and to arrive at 17:05.
However, it left 6 mins late and the journey took 42 minutes. What time did I arrive?

6. Fill in the next three terms of the following sequences:

(a) 4, 7, 10, 13, ...

(b) 95, 87, 79, 71, ...

(c) 32, 16, 8, 4, ...

(d) 2, 3, 5, 7, 11, ...

7. Simplify the following algebraic expressions:

(a) $x + x + x + x + x =$

(b) $5 + x + 5 + x =$

(c) $5 \times x \times x =$

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Section B: 30 minutes **Calculators allowed**

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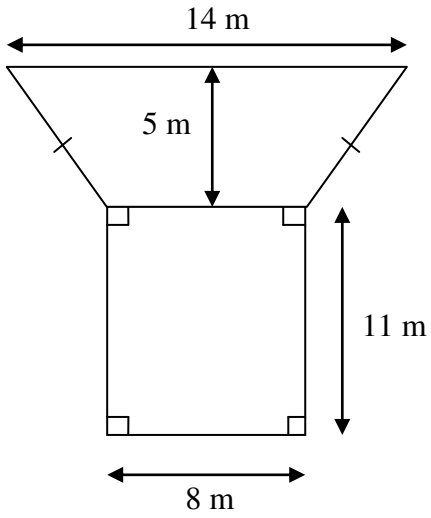
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Section B You may use a calculator for this section.

1. (a) Name the two shapes in the diagram below: ..... and .....

   (b) Find the area of the shape below (which is not drawn to scale):



2. A chocolate cake recipe contains several ingredients, including cocoa powder and butter.
   All the ingredients used together weigh 580g.
   The ratio of cocoa : butter : other ingredients is 1 : 3 : 16.

   (a) How much butter is in the cake?

   (b) If there is 261g of flour in the cake, what is the ratio of flour to butter?

3. (a) If I score 38 out of 75 in a Chemistry test, what percentage did I score?
Give your answer correct to one decimal place.

(b) Decrease £820 by 12 %.

4. A model car travels 1200 m in 15 minutes.

(a) How far would it travel in 2 hours?

(b) How long would it take to travel 5 km?

5. James is organising a barbecue.
There are 30 bread rolls in a pack and there are 8 sausages in a pack.
He needs exactly the same number of bread rolls as sausages.
What is the smallest number of each pack that he must buy? Show all your working.

6. A factorial (which has a symbol !) can be defined as follows:

$6! = 6 \times 5 \times 4 \times 3 \times 2 \times 1$

$10! = 10 \times 9 \times 8 \times 7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1$

Work out the following:

(a) $5!$

(b) $6! - 5!$

(c) $\dfrac{8!}{6!}$

(d) $\dfrac{100!}{99!2!}$

(e) $\dfrac{(x+1)!}{x!}$

THE END