REIGATE GRAMMAR SCHOOL

13+ Entrance Examination Exemplar
MATHEMATICS

Paper 1
Time: 30 minutes
Non-Calculator

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

Page	3	4	5	6	7	8	**Total**
Score							
Marks	7	6	2	11	7	7	**40**

1. Complete the following table, leaving your answers in their simplest form:

Fraction	Decimal	Percentage
$\dfrac{3}{8}$		
	0.35	
		68%

[3]

2. Calculate the following:

(a)
$$30 - 75 \div (4 - 9)^2$$

.... [2]

(b)
$$\frac{(2^3 - 2)^2}{\sqrt{3^2 + 7}}$$

[2]

....

3.	Calculate the following: $$0.37 \times 5.6$$	
	....	[2]
4.	(a) Write down an expression for the nth term of this sequence: $$3 \quad -1 \quad -5 \quad -9$$	
	....	[2]
	(b) Determine if the number -105 lies in this sequence. You must show clear reasoning.	
		[2]

| 5.	Sketch the graph of $y = -2x + 4$ on the following set of axes:	
		[2]
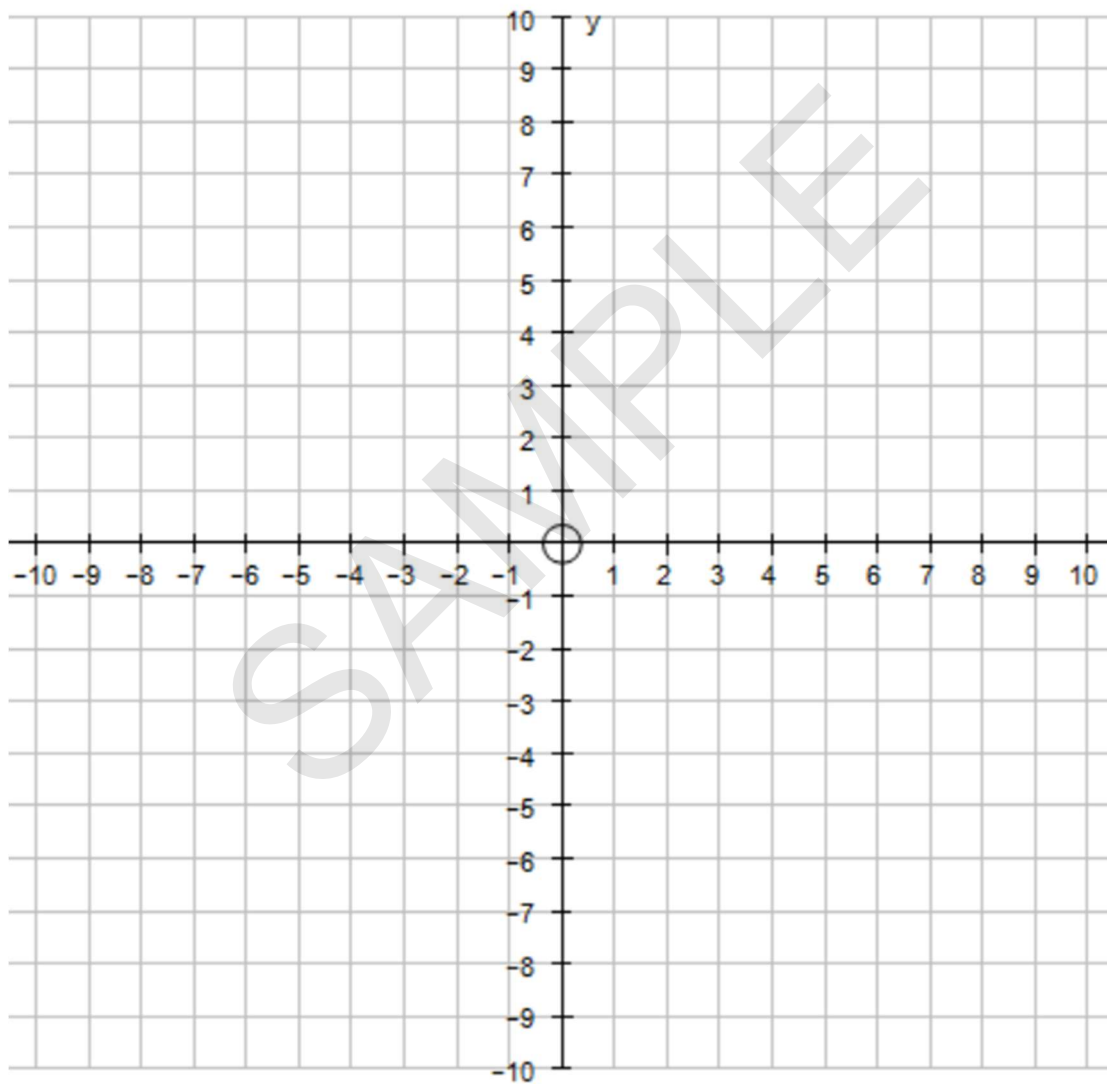
6.	Simplify the following:	
	(a) $a - 2a + 3a - 4a$	
	....	[1]
	(b) $2b - 3a + b - a$	
	....	[2]
	(c) $4x + xy - 8x + 2yx$	
	....	[2]
7.	Expand and simplify the following:	
	(a) $5(3m - 7)$	
	....	[1]
	(b) $x(x - 3y - 9)$	
	....	[2]
	(c) $7(5 - k) + 2(4 + 5k)$	
	....	[3]

8.	Fully factorise the following:	
	(a) $15a - 10$	
	....	[1]
	(b) $16a^3 - 24a^2$	
	....	[2]
9.	Calculate the following, giving your answer as a mixed number in its simplest form:	
	$$2\frac{1}{3} \div \left(3\frac{2}{3} - 2\frac{2}{9}\right)$$	
	....	[4]

10. (a) Calculate the size of angle x. **Give reasons** for each stage of your working.
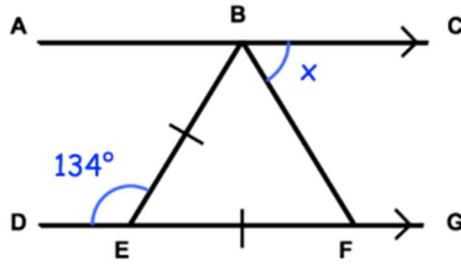
.... [4]

11. Fully simplify the following:

$$\frac{(x^6)^3 \times x^{-5}}{x^{-2}}$$

.... [3]

END OF TEST