REIGATE GRAMMAR SCHOOL

13+ Entrance Examination 2018
MATHEMATICS

Paper 2

Calculator Paper
Time Allowed: 35 Minutes

Name: .....

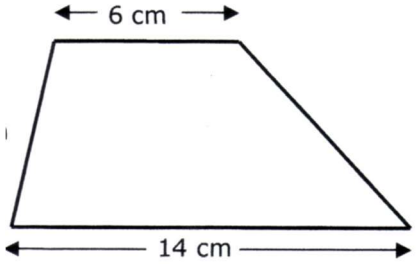
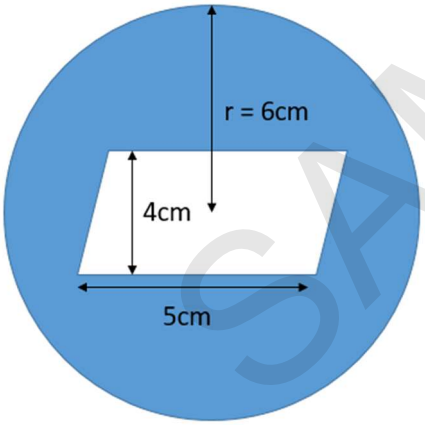
- Calculators **ARE** allowed.
- Work through the paper carefully.
- Do not spend too much time on any single question.
- Show any working clearly in the spaces provided – marks may be lost if there is not enough working.
- **You do not have to finish everything**.

Total Marks Available = 48

Page	2	3	4	5	6	7	8	9	10	11	Total
Marks											
Out of	5	7	5	6	6	5	5	4	2	3	48

1.	Holly purchases a car in 2018 for £15 000. It is estimated that the car loses 3.5% of its value every year. (a) How much will Holly's car be worth 1 year later in 2019 (to the nearest pound)? ……	[2]
	(b) How much will Holly's car be worth in 2030 (to the nearest pound)? ……	[3]

2.	(a) Find d when $a = 10, b = 41\ and\ c = 4$ Given that $d = \sqrt{b^2 - 4ac}$ ……	[3]
	(b) Find c when $a = 5, b = -6\ and\ d = 4$ Given that $d = \sqrt{b^2 - 4ac}$ ……	[4]

3.	(a) The following shape has an area of $70cm^2$. Find the height of this shape.  …….. cm	[2]
	(b) A circle with radius 6cm has a parallelogram of base 5cm and height 4cm cut out and removed. Calculate the area of the **shaded region left behind**, rounding your answer to 1 decimal place.  …….. cm^2	[3]

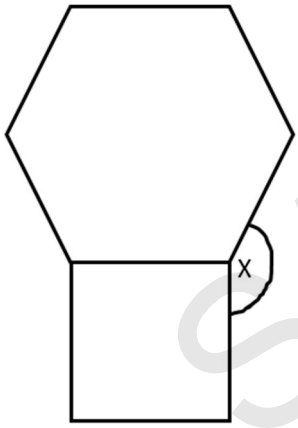
4.	Solve the following equations. Simplify your answers fully. (a) $3y + 5 = -2y + 1$ ……	[3]
	(b) $3(4x - 3) = 2 - (6x + 1)$ ……	[3]

(c) $\frac{3x}{4} - \frac{5x}{3} = \frac{1}{2}$

..... [3]

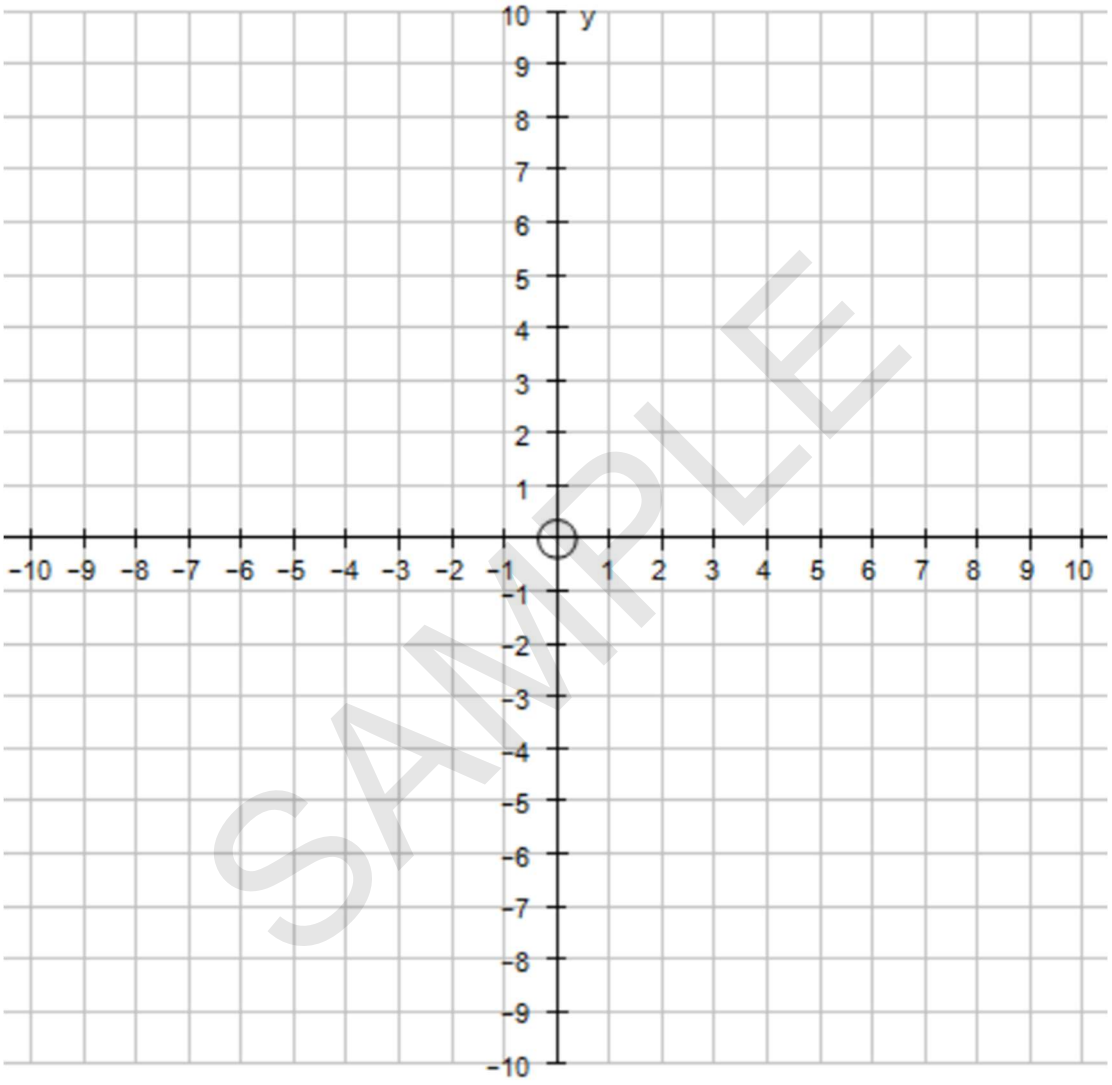
(d) $\frac{3x+2}{3} = \frac{2x}{5}$

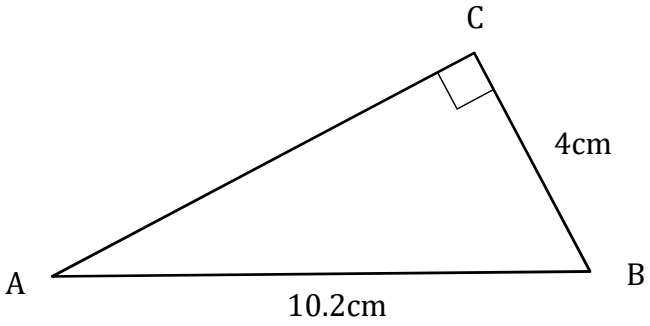
..... [3]

	(e) $20 = \frac{4}{x-2}$ ……	[2]
5.	This shape is made up of one square and one regular hexagon. What is the size of the missing angle in this diagram?  ……	[3]

6.	Sam is x years old. Alice is 4 years older than Sam. Katy is 3 times older than Alice. (a) Write down the sum of their ages in terms of x. …….	[2]
	(b) Given that the sum of their ages is 96, find how old Sam, Alice and Katy are. Sam is ……. Alice is ……. Katy is …….	[3]

7.	In a car park the ratio of white cars to red cars is 2:5 The ratio of white cars to blue cars is 3:13 Altogether there are 376 white, red and blue cars. How many red cars are there in the car park? ……	[4]

8.	Sketch the graph of $y = 2x - 5$ on the following set of axes:  	[2]

9.	ABC is a right-angled triangle.  Calculate the length of AC. Give your answer correct to **3 significant figures** .....cm	[3]

END OF TEST