

REIGATE GRAMMAR SCHOOL

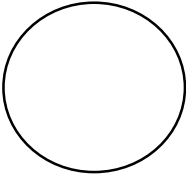
13+ Entrance Examination
MATHEMATICS

SAMPLE Paper
Time: 30 minutes
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

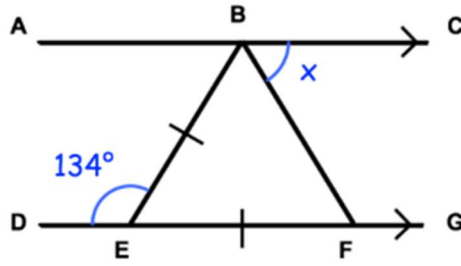
Page	3	4	5	6	7	8	Total
Score							
Marks	7	6	7	6	9	7	42

1.	<p>Given that:</p> $c = \frac{2b - 3a - 1}{ab^2}$ <p>Find c when $a = -5$ and $b = -2$.</p> <p>.....</p>	[3]
2.	<p>The area of a circle is 40cm^2.</p> <p>Find the circumference of the circle.</p> <p>Give your answer to 3 significant figures.</p>  <p>.....</p>	[4]

3.	<p>(a) Write down an expression for the n^{th} term of this sequence:</p> $3 \quad -1 \quad -5 \quad -9$ <p>..... [2]</p> <p>(b) Determine if the number -105 lies in this sequence. You must show clear reasoning.</p> <p>..... [2]</p>	[2]
4.	<p>Amir buys a car for £8000 and later sells it at a loss for £5400. Calculate the percentage loss that Amir has made.</p> <p>..... [2]</p>	[2]

5.	<p>A polygon has an interior angle that is five times larger than its exterior angle.</p> <p>How many sides does the polygon have?</p> <p>.....</p>	[4]
6.	<p>The perimeter of a triangle is 81cm.</p> <p>The lengths of the sides of the triangle are in the ratio 8 : 13 : 3</p> <p>Work out the length of the longest side of the triangle.</p> <p>Give your answer as a decimal showing all digits.</p> <p>.....</p>	[3]

7. Calculate the size of angle x . **Give reasons** for each stage of your working.



[3]

8. Fully simplify the following:

$$\frac{3xy \times 4x^2}{(3y^2)^2}$$

.....

[3]

9.

Solve the following equations.

Give your answers as fully simplified fractions where appropriate.

(a) $4(3a - 2) = 36$

[2]

.....

(b) $3 - 6y = 2y + 1$

[3]

.....

(c) $-3(5 - 3x) = 2 - (2x + 5)$

[4]

.....

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

..... [4]

10. ABC is a right-angled triangle.

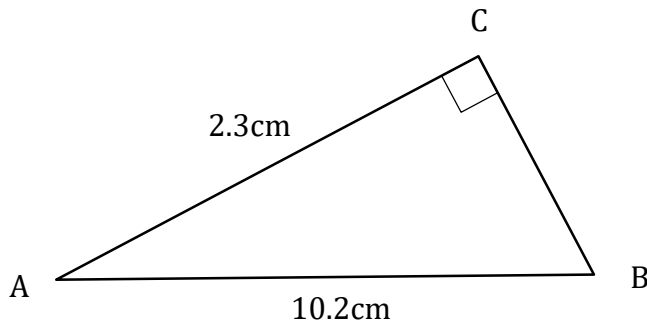


Diagram NOT accurately drawn

Calculate the length of BC.
Give your answer correct to **3 significant figures**

..... cm [3]

END OF TEST