Name: _____

Maths Genie Stage 7

Test C

Instructions

• Use **black** ink or ball-point pen.
• Answer all questions.
• Answer the questions in the spaces provided
– *there may be more space than you need.*
• Diagrams are **NOT** accurately drawn, unless otherwise indicated.
• You must **show all your working out.**
• **Calculators may be used.**

Information

• The marks for each question are shown in brackets
– *use this as a guide as to how much time to spend on each question.*

Advice

• Read each question carefully before you start to answer it.
• Keep an eye on the time.
• Try to answer every question.
• Check your answers if you have time at the end

1 Write down the inequality shown on the number line.

....
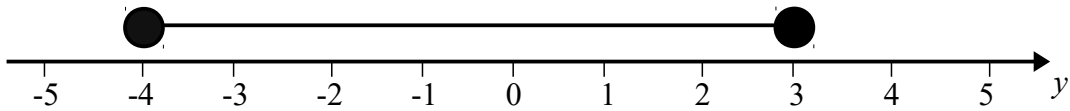
(Total for Question 1 is 2 marks)

2 The nth term of a sequence is $n^2 + 3$

(a) Find the first two terms of this sequence.

.... , ...

(1)

(b) Is 33 a term in this sequence.
You must show how you get your answer.

....

....

(1)

(Total for Question 2 is 2 marks)

3 The table shows the probabilities that a biased dice will land on 1, on 2, on 3, on 5 and on 6.

Number	1	2	3	4	5	6
Probability	0.11	0.1	0.18		0.15	0.22

The dice is rolled 200 times.

Work out an estimate for the number of times the dice will land on 2 or on 4.

....

(Total for Question 3 is 3 marks)

4 The table shows information about the number of points scored in a game.

Points	Frequency
0	9
1	11
2	18
3	7
4	4
5	1

Work out the mean number of points per game.

…........................

(Total for Question 4 is 3 marks)

5 *ABC* is an isosceles triangle.

Calculate the perpendicular height of *ABC*.
Give your answer correct to 3 significant figures..

A

14 cm

C   9 cm   B

…......................................cm
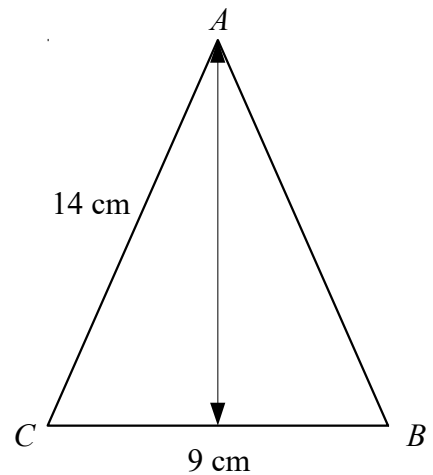
(Total for Question 5 is 3 marks)

6   The diagram shows a cuboid.

Find the total surface area of the cuboid.

4 cm

6 cm

11 cm

…….......….......................................
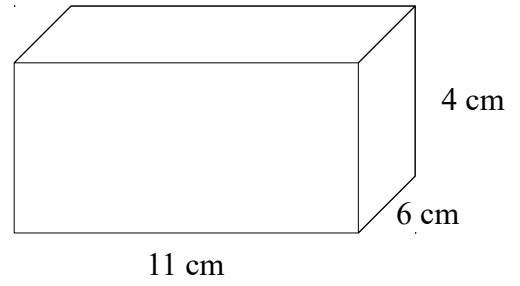
(Total for Question 6 is 3 marks)

7   Adam has some marbles.
Bradley has three times as many marbles are Adam.
Chris has 6 more marbles than Bradley.

In total they have 48 marbles.

How many marbles does Chris have?

....
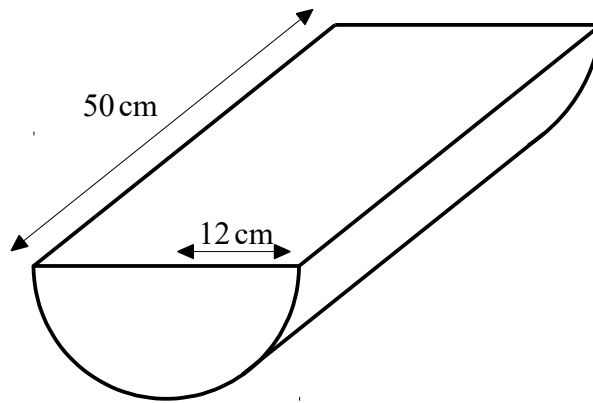
(Total for Question 7 is 3 marks)

8   Greg bought a new car for £15 000.
In the first year the value of the car depreciates by 25%.
In the second year and the third year the car depreciates by 12%

Work out the value of the car after three years.

£...

(Total for Question 8 is 3 marks)

9   A solid cylinder is cut in half to form a semi-cylinder with a radius of 12 cm and a length of 50 cm.

50 cm

12 cm

Work out the volume of the semi-cylinder.
Give your answer correct to 3 significant figures.

....cm^3

(Total for Question 9 is 3 marks)