Name: _____

Maths Genie Stage 7

Test B

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 The table shows information about the number of goals a team scored in 38 games.

Points	Frequency
0	8
1	16
2	9
3	5
4 or more	0

(a) Find the median number of goals scored.

…..........................

(1)

(b) Write down the mode

…..........................

(1)

(c) Work out the total number of goals the team scored in all 38 games.

…......................…

(2)

(Total for Question 1 is 4 marks)

2 A biased spinner can land on 1, 2, 3 or 4.
The table shows the probabilities that the spinner will land on 2 and 4.

Number	1	2	3	4
Probability		0.34		0.18

The probability that the spinner will land on 1 is **twice** the probability that the spinner will land on 3.

(a) Complete the table.

(2)

Johnny is going to spin the spinner 200 times.

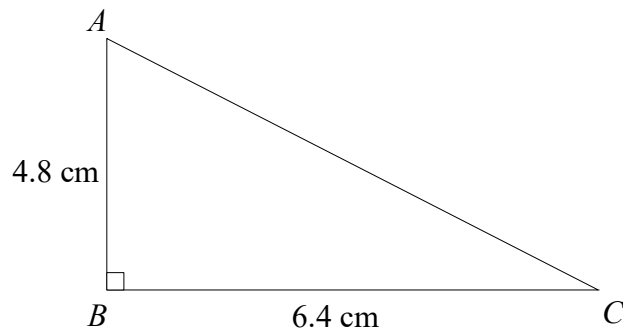(b) Work out an estimate for the number of times the spinner will land on 2.

(2)

(Total for Question 2 is 4 marks)

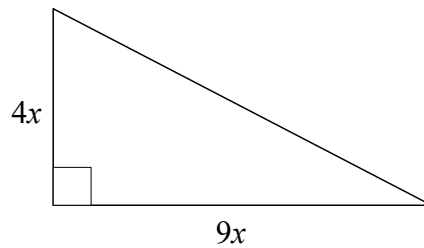**3** Solve $3(2x + 1) > 27$

(Total for Question 3 is 2 marks)

4

A

4.8 cm

B 6.4 cm C

Calculate the length of AC.

…......................................cm

(Total for Question 4 is 3 marks)

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5   The diagram shows a right angled triangle.
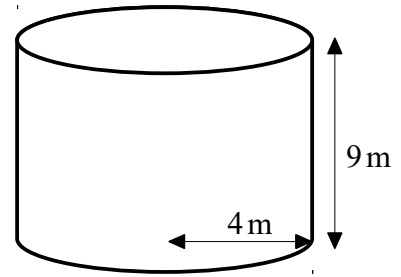
$4x$

$9x$

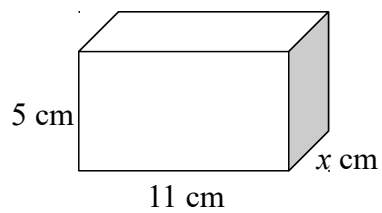The area of the triangle is 252 cm^2

Work out the value of x.

(Total for Question 5 is 3 marks)

6 A solid cylinder has a radius of 4 m and a height of 9 m.

Work out the total surface area of the cylinder.
Give your answer in terms of π.

9 m

4 m

....

(Total for Question 6 is 3 marks)

7 The diagram shows a cuboid.

5 cm

11 cm

x cm

The volume of the cuboid is 330 cm^3

Calculate the value of x

….................…………......

(Total for Question 7 is 2 marks)

8   Here are the first 5 terms of a sequence.

4   11   18   25   32

Find an expression, in terms of n, for the nth term of this sequence.

....................…......................

(Total for Question 8 is 2 marks)

9   Fearne invests £4500 in a savings account.
She gets 2.5% per annum compound interest.

After n years, Fearne has £5482.81 in her account.
Work out the value of n.

…......................................

(Total for Question 9 is 2 marks)