

Name: \_\_\_\_\_

# Maths Genie Stage 7

## Test A

### 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 Annie invests £8000 for 5 years in a savings account.  
She gets 1.6% per annum compound interest.

How much money does Annie have at the end of 5 years.

£.....

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

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- 2 Here are the first 5 terms of a sequence.

23                  17                  11                  5                  -1

- (a) Find the next term of this sequence.

.....

The  $n$ th term of a different sequence is  $5n^2 + 4$

(1)

- (b) Work out the 5<sup>th</sup> term of this sequence.

.....

(1)

**(Total for Question 2 is 2 marks)**

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3 (a)  $-2 < n \leq 3$  where  $n$  is an integer.

Write down all the possible values of  $n$ .

.....  
(2)

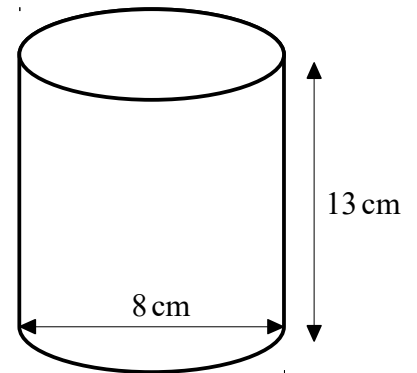
(b) Solve  $2x + 3 > 18$

.....  
(2)

(Total for Question 3 is 4 marks)

4 A cylinder has a diameter of 8 cm and a height of 13 cm.

Work out the volume of the cylinder.  
Give your answer correct to 1 decimal place.



..... cm<sup>3</sup>

(Total for Question 4 is 3 marks)

5 A biased spinner can land on red, blue, yellow and green.

The table shows the probabilities that the spinner will land on red, blue and yellow.

<b>Colour</b>	Red	Blue	Yellow	Green
<b>Probability</b>	0.28	0.33	0.25	

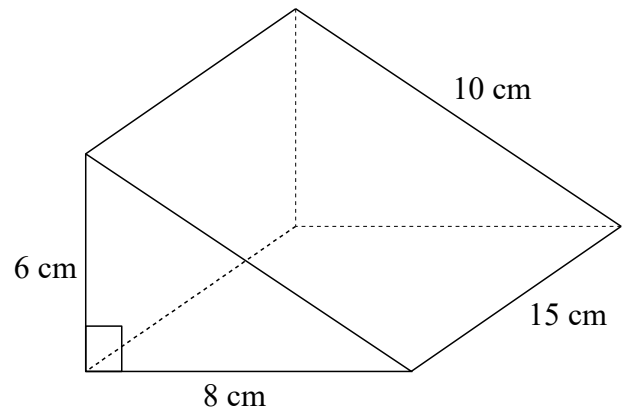
Complete the table to show the probability that spinner will land on green.

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(Total for Question 5 is 2 marks)

6 The diagram shows a triangular prism.

Find the total surface area of the triangular prism.

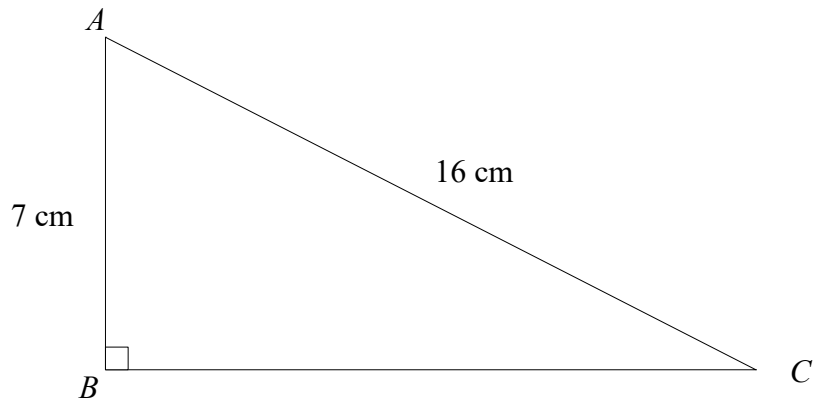


.....

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(Total for Question 6 is 3 marks)

7

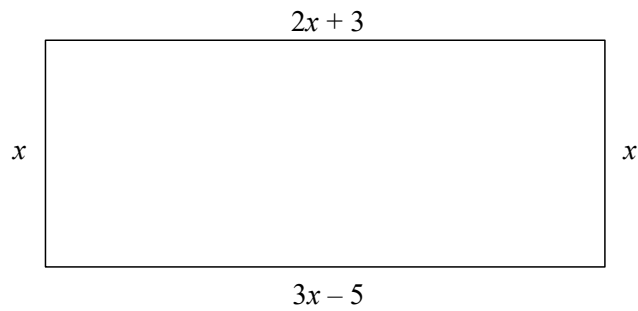


Calculate the length of  $BC$ .  
Give your answer to 1 decimal place.

.....cm

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

8 The diagram shows a rectangle.  
All measurements are in centimetres.



Find the perimeter of the rectangle.

..... cm

**(Total for Question 8 is 3 marks)**

9 Michael recorded the maximum temperature every day in September.

The table shows information about his results.

Temperature ( $^{\circ}\text{C}$ )	Frequency
$14 < t \leq 18$	8
$18 < t \leq 20$	9
$20 < t \leq 22$	7
$22 < t \leq 24$	4
$24 < t \leq 28$	2

Calculate an estimate for the mean maximum temperature.

..... $^{\circ}\text{C}$

**(Total for Question 9 is 3 marks)**

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