

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

# Maths Genie Stage 3

## 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 Write 23% as a fraction.

$$\frac{23}{100}$$

(Total for Question 1 is 1 mark)

2 Write 0.79 as a percentage.

$$79\%$$

(Total for Question 2 is 1 mark)

3 Solve  $7g = 42$

$$g = 6$$

(Total for Question 3 is 1 mark)

4 Ava wants to buy as many chocolate bars as she can.

She has £5 to spend on chocolate bars.

Each chocolate bar costs £0.42

Work out how much change Ava will get from £5.

$$\frac{5}{0.42} = 11.904... \quad 11 \text{ chocolate bars}$$

1 for identifying 11 chocolate bars

$$11 \times 0.42 = \pounds 4.62 \quad 1 \text{ for } \pounds 4.62$$

$$5 - 4.62 = \pounds 0.38 \quad \text{or } 38p$$

$$\pounds 0.38$$

(Total for Question 4 is 3 marks)

5 Use your calculator to work out  $\frac{\sqrt{15.6 - 4.32}}{3.78^2}$

(a) Write down all the figures on your calculator display.

1 for either 3.35857... or 14.2884

0.2350557882

(2)

(b) Write your answer to part (a) correct to 2 decimal places.

0.24

(1)

(Total for Question 5 is 3 marks)

6  $v = u + at$

$$u = 3$$

$$a = 10$$

$$t = 6$$

$$v = 3 + (10)(6)$$

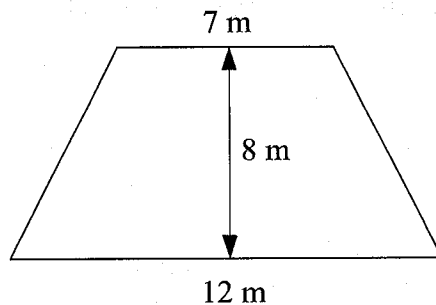
Work out the value of  $v$ .

1 mark for correct substitution

$$v = \underline{63}$$

(Total for Question 6 is 2 marks)

7 The diagram shows a garden in the shape of a trapezium.



Find the area of the garden.

1 mark for correct method to find area of a trapezium

$$\frac{1}{2} (7 + 12) \times 8$$

1 mark for  $m^2$

$$\underline{76} \quad m^2$$

(Total for Question 7 is 3 marks)

8 Solve  $25 - m = 11$

$$m = 14$$

(Total for Question 8 is 1 mark)

9 Here are the weights, in grams, of 6 potatoes

137 123 107 125 151 146

(a) Work out the range.

$$151 - 107$$

$$\dots\dots\dots 44 \dots\dots\dots$$

(1)

(b) Work out the median weight.

107 123 125 137 146 151

$$\frac{125 + 137}{2} = 131$$

$$\dots\dots\dots 131 \dots\dots\dots \text{g}$$

(2)

1 mark for 125 and 137 (Total for Question 9 is 3 marks)

10 Here are the times, in seconds, it took 20 people to run a race.

~~62~~ ~~79~~ ~~69~~ ~~61~~ ~~86~~ ~~73~~ ~~82~~ ~~52~~ ~~59~~ ~~82~~  
~~64~~ ~~74~~ ~~55~~ ~~71~~ ~~63~~ ~~80~~ ~~76~~ ~~66~~ ~~53~~ ~~63~~

Draw an ordered stem and leaf diagram to show this information.

1 mark for just one error

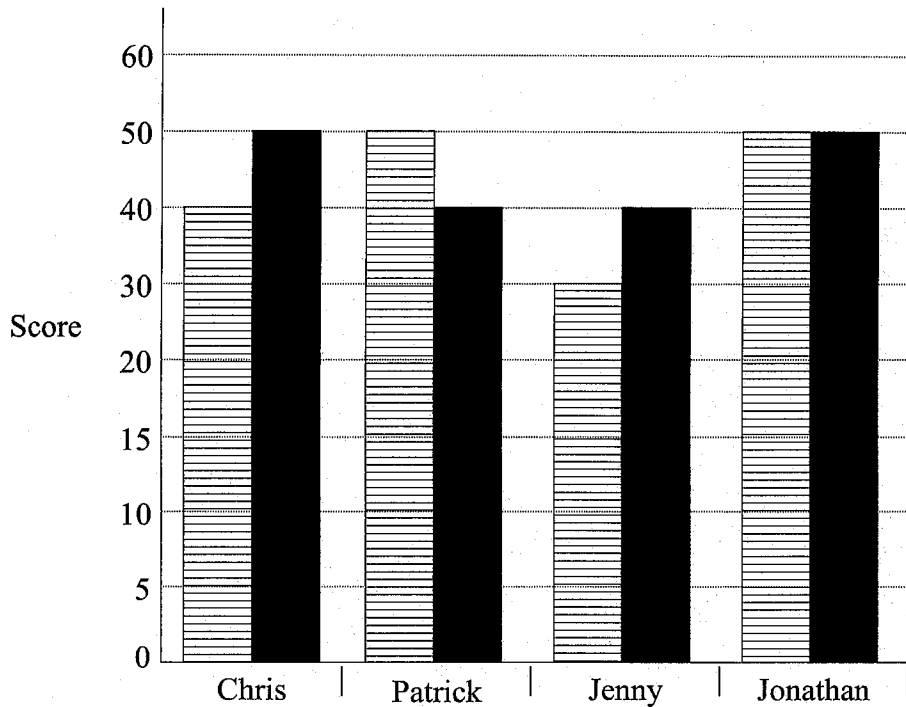
5	2 3 5 9
6	1 2 3 3 4 6 9
7	1 3 4 6 9
8	0 2 2 6

1 mark for key

Key:  $5|2 = 52\text{s}$

(Total for Question 10 is 3 marks)

11 Here is a bar chart showing the scores of five students in their Maths and Science tests.

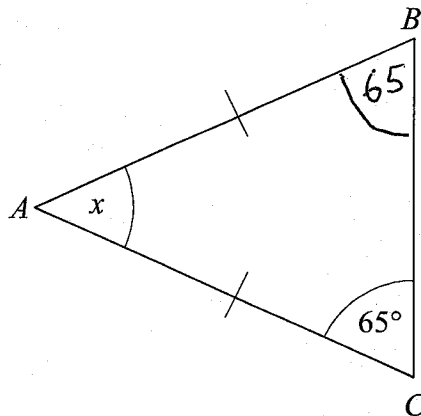


Write down two things wrong with this graph.

- 1 *There is no key*
- 2 *The vertical scale is not linear*

(Total for Question 11 is 2 marks)

12  $ABC$  is an isosceles triangle Work out the size of the angle marked  $x$ .



$$65 \times 2 = 130$$

1 mark for correct method

$$180 - 130 = 50^\circ$$

50°

(Total for Question 12 is 2 marks)