

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

# Maths Genie Stage 3

## Test D

### 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 a number in each box to make the calculation correct.

(i)  $\boxed{36} + 7 = 43$  (1)

(ii)  $51 = 84 - \boxed{33}$  (1)

(Total for Question 1 is 2 marks)

2  $H = f - 2g$

Work out the value of  $H$  when  $f = 15$  and  $g = -4$

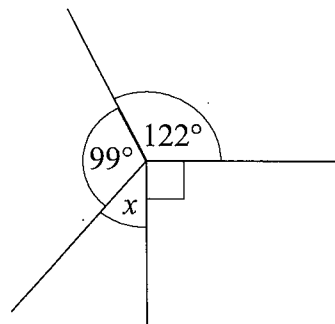
1 mark for correct substitution/method

$$H = 15 - 2(-4)$$
$$= 23$$

23

(Total for Question 2 is 2 marks)

3



$$360 - 122 - 99 - 90$$

(a) Work out the size of the angle marked  $x$ .

49°

(b) Give a reason for your answer.

Angles around a point add to  $360^\circ$

(Total for Question 3 is 2 marks)

2600g

4 A shop sells washing powder in 2.6 kg packs.  
 Jacob has no washing powder.  
 He estimates that he does 2 washes a week, using 80g each wash.  
 Jacob wants to buy enough washing powder for 52 weeks.  
 How many packs of washing powder does Jacob need to buy?

$$2 \times 80 = 160g$$

$$160 \times 52 = 8320g \quad \text{1 mark for 8320g}$$

1 mark for 8.32/2.6 or 8320/2600 or 3.2

$$\frac{8320}{2600} = 3.2 \quad (4 \text{ PACKS})$$

4

For no working/incorrect working 0 marks

(Total for Question 4 is 3 marks)

5 Write 0.11 as a fraction.

$$\frac{11}{100}$$

(Total for Question 5 is 1 mark)

6 Write 0.9 as a percentage.

$$90\%$$

(Total for Question 6 is 1 mark)

7 (a) Find the value of  $9.5^2 + 2.5^2$

$$96.5$$

(1)

(b) Find the value of  $\sqrt{9.8 + 13.56} - 2.17$

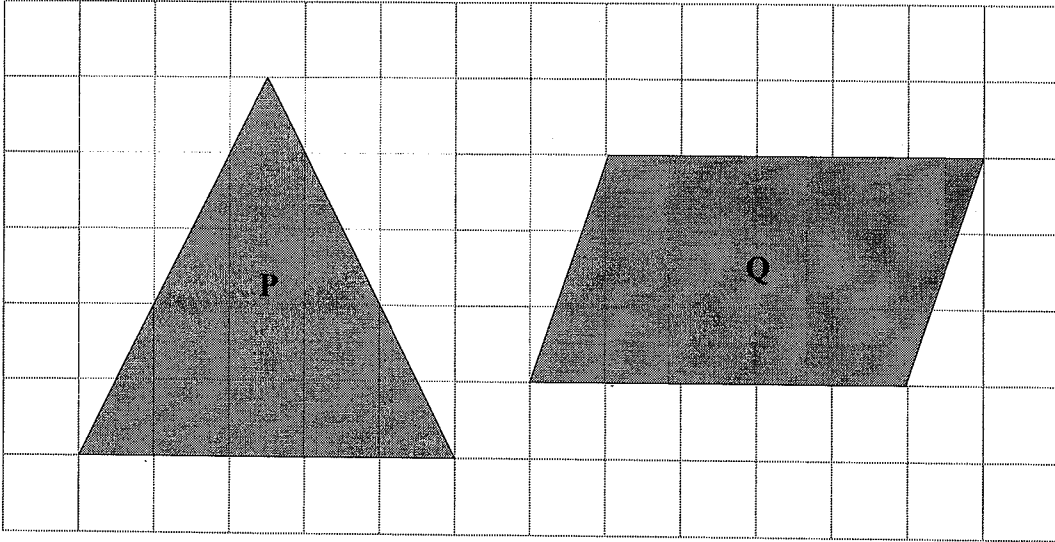
1 mark for 4.8332...

$$2.663218389$$

(2)

(Total for Question 7 is 3 marks)

8 The diagram shows two shapes on a centimetre grid.



(a) Find the area of shape P

$$\frac{1}{2} \times 5 \times 5$$

..... 12.5 ..... cm<sup>2</sup>

(b) Write down the mathematical name for shape Q.

..... *parallelogram* .....

(c) Find the area of shape Q.

$$5 \times 3$$

..... 15 ..... cm<sup>2</sup>

(Total for Question 8 is 3 marks)

9 Here are the heights, in cm, of 18 people.

~~155~~ ~~174~~ ~~171~~ ~~194~~ ~~153~~ ~~157~~ ~~173~~ ~~186~~ ~~155~~  
~~179~~ ~~169~~ ~~180~~ ~~153~~ ~~152~~ ~~181~~ ~~193~~ ~~175~~ ~~184~~

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

1 mark for just one error

|    |             |
|----|-------------|
| 15 | 2 3 3 5 5 7 |
| 16 | 9           |
| 17 | 1 3 4 5 9   |
| 18 | 0 1 4 6     |
| 19 | 3 4         |

Key: 15 | 2 = 156 cm

(Total for Question 9 is 2 marks)

10 Here is a list of seven numbers.  
One of the numbers is hidden.

|   |   |    |    |   |    |   |
|---|---|----|----|---|----|---|
| 7 | 8 | 11 | 13 | 9 | 15 | ? |
|---|---|----|----|---|----|---|

The mean of the numbers is 12.

Find the value of the hidden number.

1 mark for 84

$$7 \times 12 = 84 \text{ (The numbers add to 84)}$$

$$7 + 8 + 11 + 13 + 9 + 15 = 63$$

$$84 - 63$$

21

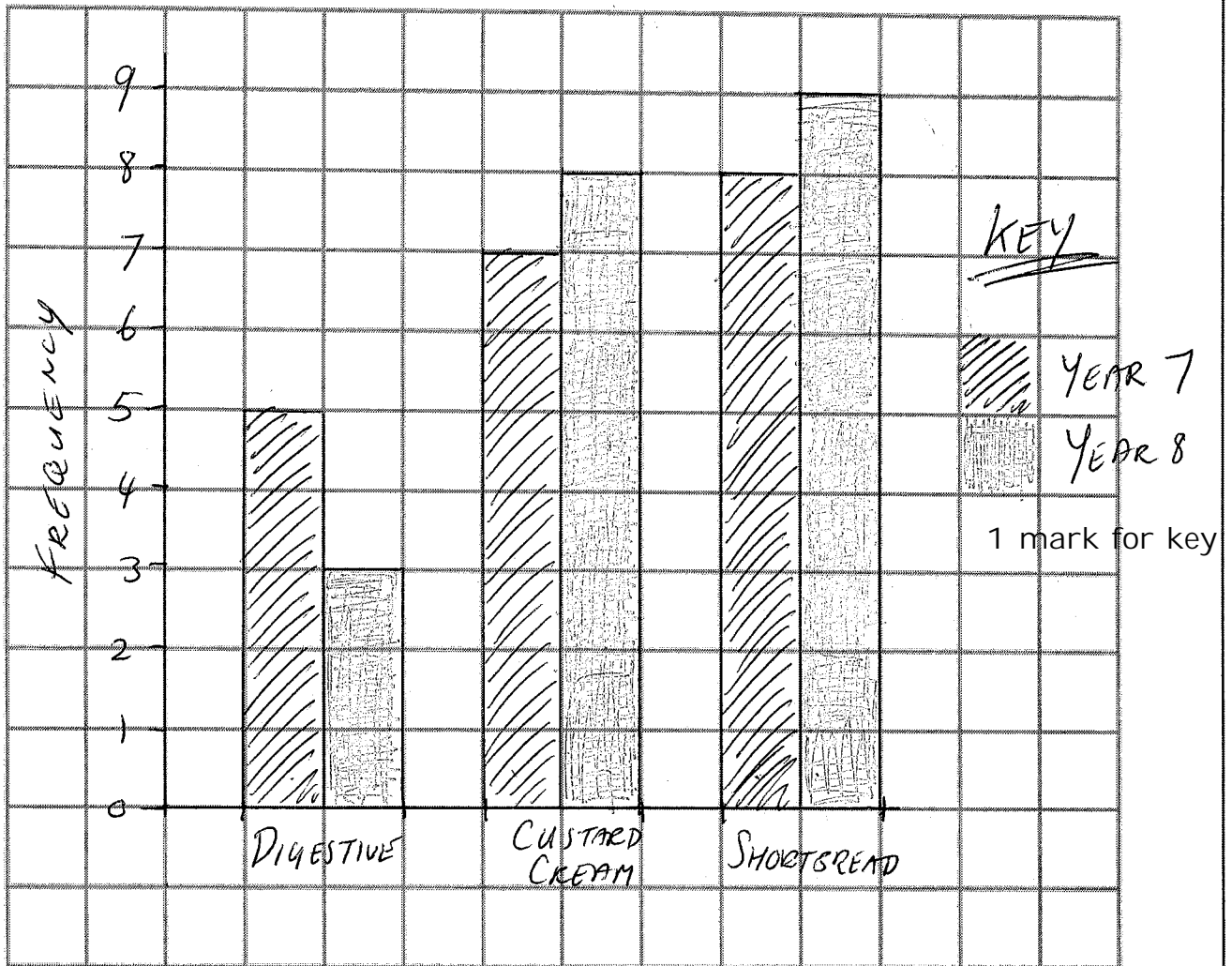
(Total for Question 10 is 2 marks)

11 20 students in each of year 7 and year 8 were asked how about their favourite biscuits.

The table gives information about the results.

|        | Digestive | Custard Cream | Shortbread |
|--------|-----------|---------------|------------|
| Year 7 | 5         | 7             | 8          |
| Year 8 | 3         | 8             | 9          |

Draw a suitable bar chart for this information.



1 mark for correct scales and labels

1 mark for correct heights of all bars

(Total for Question 11 is 4 marks)