Name: _____

Maths Genie Stage 3

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 Write $\frac{2}{5}$ as a decimal.

0.4

(Total for Question 1 is 1 mark)

2 Write 0.03 as a fraction.

$\frac{3}{100}$

(Total for Question 2 is 1 mark)

3 5 calculators cost £31.25   *5 × 6 = 30*
3 pens cost £2.91   *3 × 10 = 30*

1 mark for correct method

Work out the cost of 30 calculators and 30 pens.

$31.25 \times 6 + 2.91 \times 10$

$= £216.60$

£ *216.60*

(Total for Question 3 is 2 marks)

4 A square has a perimeter of 32 cm.

Find the area of the square.

$\frac{32}{4} = 8$ *each side is 8 cm*

1 mark for 8 (cm)

$8 \times 8 = 64 \text{ cm}^2$

64 cm²

(Total for Question 4 is 2 marks)

5 Here are six cards. Each card has a number on it.

$$\boxed{15}\ \boxed{14}\ \boxed{9}\ \boxed{12}\ \boxed{16}\ \boxed{21}$$

(a) Work out the range of the numbers on the cards.

$$21 - 9$$

_____ _12_ _____

(1)

(b) Work out the mean of the numbers on the cards.

$$\frac{15 + 14 + 9 + 12 + 16 + 21}{6} = 14.5$$

1 mark for correct method

_____ _14.5_ _____

(2)

(Total for Question 5 is 3 marks)

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6 Work out $\dfrac{3.15 + 2.8^2}{2.06}$

1 mark for 10.99

Write down all the figures on your calculator display.

_____ _5.334951456_ _____

(Total for Question 6 is 2 marks)

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7 $L = 9m + 2n$

Work out the value of L when $m = -3$ and $n = 4$

$$9(-3) + 2(4) = -19$$

1 mark for correct substitution

_____ _-19_ _____

(Total for Question 7 is 2 marks)

8 (a) Solve $3x = 36$

$x =$ _12_

(1)

(b) Solve $\dfrac{24}{y} = 6$
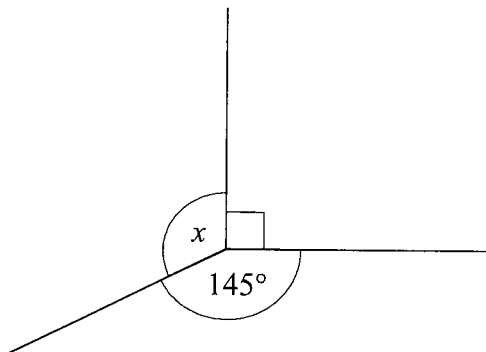
$y =$ _4_

(1)

(c) Solve $a - 8 = 17$

$a =$ _25_

(1)

(Total for Question 8 is 3 marks)
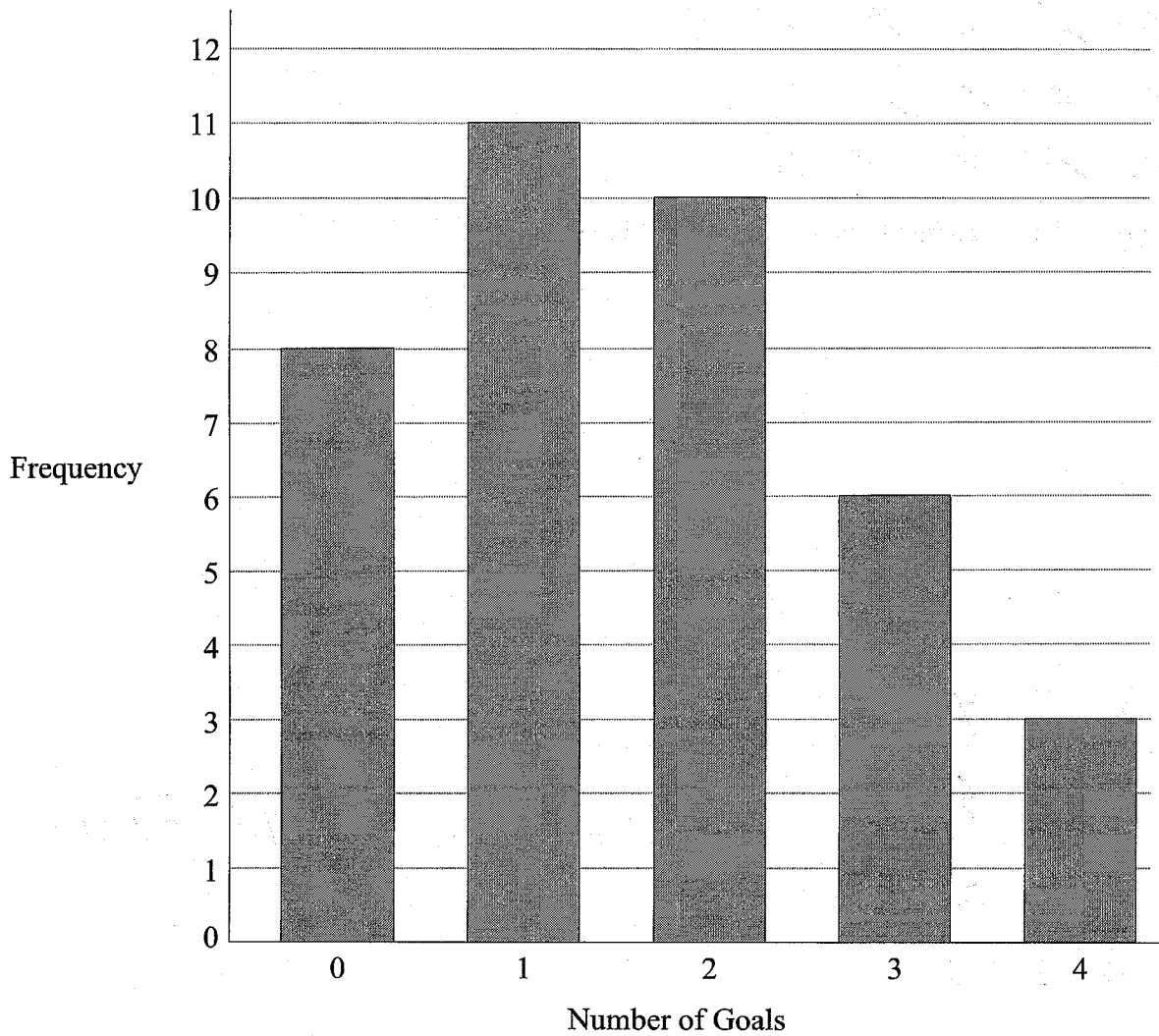
9 Work out the size of the angle marked x.

$360 - 90 - 145$

1 mark for correct method

_125_ °

(Total for Question 9 is 2 marks)

10 Here is a bar chart showing the number of goals scored in a game by a football team in a season.

(a) What is the modal number of goals scored.

_____1_____

(1)

(b) Work out the total number of goals were scored in total by the team.

1 mark for (8), 11, 10, 6 and 3

$11 \times 1 = 11$

$10 \times 2 = 20$

$6 \times 3 = 18$

$3 \times 4 = 12$

$11 + 20 + 18 + 12 = 61$

_____61_____

(3)

1 mark for correct method

(Total for Question 10 is 4 marks)

11 Here are the heights, in cm, of 15 plants.

50 39 52 53 25

32 29 45 35 33

29 21 46 44 41

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

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

Key: 2/5 = 25cm

(Total for Question 11 is 3 marks)