Name: _____

Maths Genie Stage 5

Test C

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.
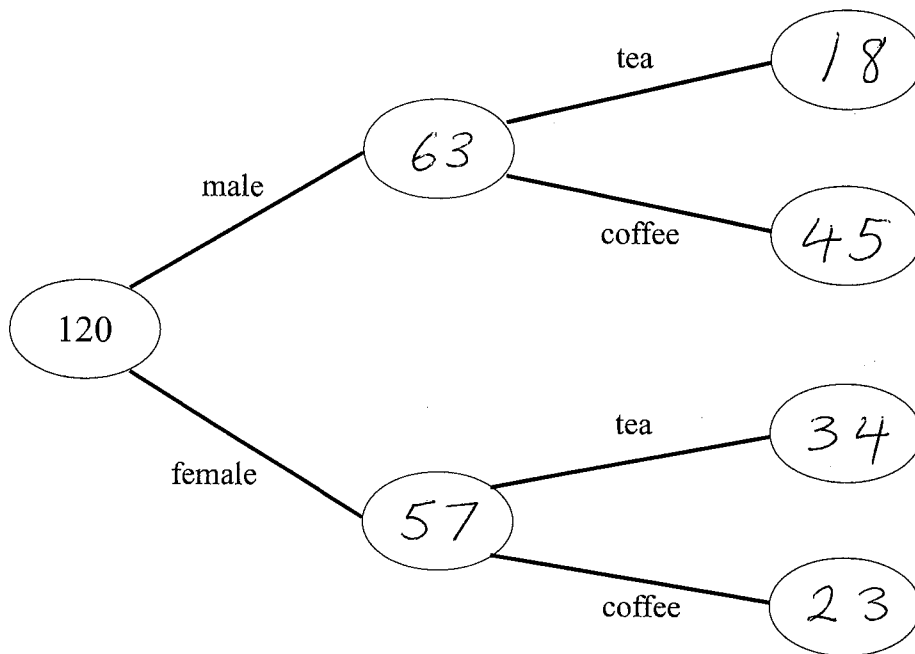• Check your answers if you have time at the end

1 120 people were asked if they prefer tea or coffee.

63 of the people were male.
34 of the females preferred tea.
68 of the people preferred coffee.

(a) Use this information to complete the frequency tree.

(3)

One of the 120 people is chosen at random.

(b) Write down the probability that this person is female and preferred tea.

$$\frac{34}{120}$$

(1)

(Total for Question 1 is 4 marks)

$$\left[OR \ \frac{17}{60} \right]$$

2 Dave is making cookies.
He mixes flour, butter and sugar in the ratio 5 : 4 : 1

Dave uses 140 grams of butter.
Work out how much flour and sugar Dave uses.

$$\frac{140}{4} = 35$$

F : B : S

×35 (5 : 4 : 1

175 : 140 : 35
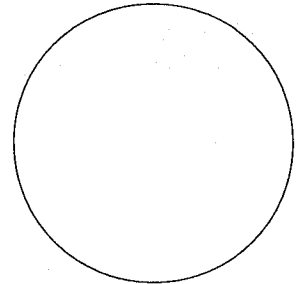
5 × 35 = 175

flour __175__ grams

sugar __35__ grams

(Total for Question 2 is 3 marks)

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3 A circular field has a diameter of 26 metres.
A farmer wants to build a fence around the edge of the field.

Each metre of fence will cost £18

Work out the total cost of the fence.

Circumference = πd

= 26π

= 81.68 m

81.68 × 18 = £1470.27

£ __1470.27__

(Total for Question 3 is 3 marks)

Alternative: 18 × 82 = £1476

4 Solve $12t - 19 = 7t - 13$

$\quad\quad\quad -7t \quad\quad\quad -7t$

$\quad\quad 5t - 19 = -13$

$\quad\quad\quad\quad +19 \quad\quad +19$

$\quad\quad\quad 5t = 6$

$\quad\quad\quad t = \dfrac{6}{5}$ or 1.2

$t = \dfrac{6}{5}$

(Total for Question 4 is 2 marks)

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5 350 students are asked how they get to school.

All of the students either walk to school or get the bus to school.

42% of the students walk to school. $\quad 0.42 \times 350 = 147$

56% of the students are boys. $\quad\quad 0.56 \times 350 = 196$

24% of the students are boys who get the bus to school.

$\quad\quad\quad\quad\quad\quad\quad\quad\quad 0.24 \times 350 = 84$

Work out how many girls walk to school.

	Walk	Bus	Total
Boys	112	84	196
Girls	35	119	154
Total	147	203	350

35

(Total for Question 5 is 4 marks)

6 George is going on a trip to Vietnam.

He wants to change £950 into Vietnamese dong.
George wants to get as many 200 000 dong notes as possible.

The exchange rate is £1 = 30 000 dong.
Work out the greatest number of 200 000 dong notes that George can get for £950

$$950 \times 30000 = 2850000$$

$$\frac{2850000}{200000} = 142.5$$

.... *142* ....

(Total for Question 6 is 3 marks)

7 Last year Geri's council tax bill was £1945

This year she has to pay £2025 for her council tax.

Work out the percentage increase in her council tax bill.

Give your answer to 1 decimal place.

$$Percentage \ increase = \frac{change}{original} \times 100$$

$$\frac{2025 - 1945}{1945} \times 100 = 4.1$$
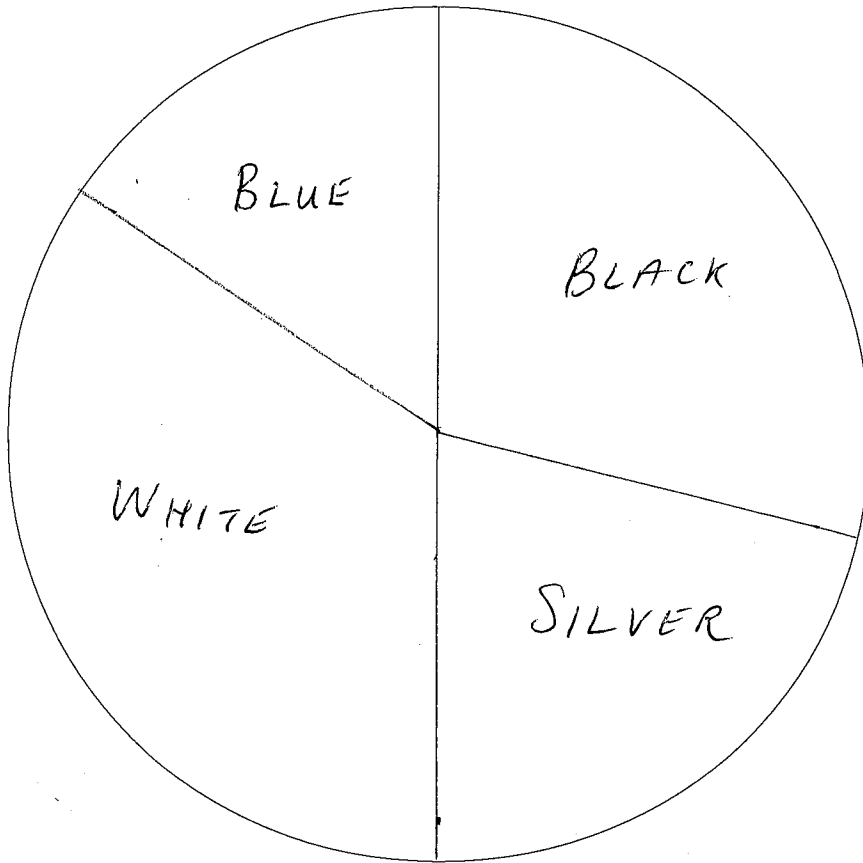
.... *4.1* .... %

(Total for Question 7 is 3 marks)

8 The table shows some information about the colours of cars parked in a car park.

Colour	Frequency		Degrees
Black	26	×4	104
Silver	19	×4	76
White	31	×4	124
Blue	14	×4	56

90 ×4 360

Draw an accurate pie chart to show this information.

BLUE

BLACK

WHITE

SILVER

(Total for Question 8 is 3 marks)