# GCSE
## Practice Paper 1MA1

**White Rose Maths**

# Mathematics

## Paper 1F (Non-Calculator)
## Foundation Tier
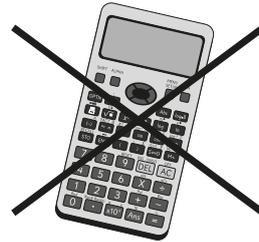
| Surname | Other names |
|---|---|
|  |  |

**You should have:**

A pen, pencil, ruler and an eraser.

Tracing paper may be used.

A formula sheet.

**Information**

- The total mark for this paper is 80
- The marks for each question are shown in brackets.
- Answer all questions in the spaces provided – *there may be more space than you need.*
- You must show all your working.
- Diagrams are not accurately drawn, unless otherwise indicated.
- Calculators may not be used.
- Check your answers if you have time at the end.

**1** Here are four digit cards.

| 6 | 5 | 5 | 7 |
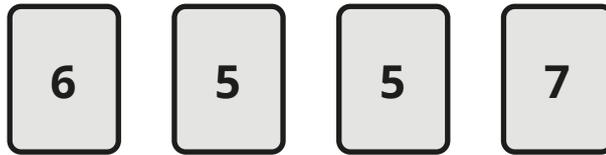
**a)** Write down the smallest 4-digit number that can be made using these cards.

_____

(1 mark)

**b)** Arrange the cards to give the greatest possible answer to the calculation.

□□ + □□

(1 mark)

**2** The incomplete pictogram shows information about the number of pets owned by students in a class.

The row for fish has not been completed.
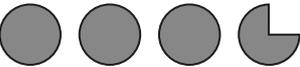
| | |
|---|---|
| Cat | 🔵🔵🔵◖ |
| Dog | 🔵🔵🔵🔵🔵 |
| Rabbit | 🔵🔵🔵◖ |
| Fish | |
| Other | 🔵🔵◖ |

**Key:**

🔵 represents 4 pets

The class owned 72 pets altogether.

Complete the pictogram.

(2 marks)

**3 a)** Simplify $6a - 3a - 2a$.

_____
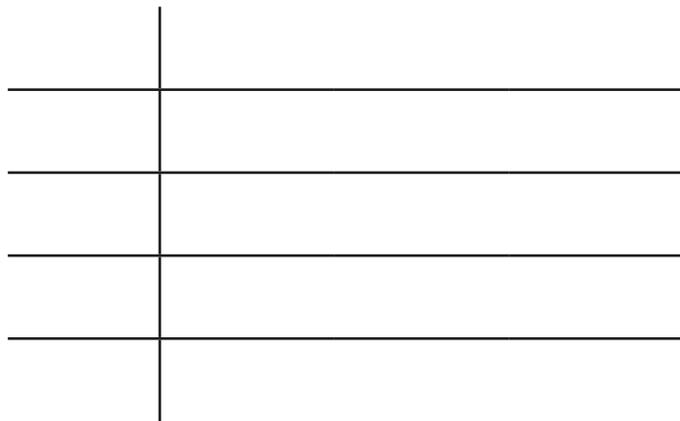
(1 mark)

**b)** Simplify $5 \times a \times b \times 7$

_____

(1 mark)

**4** Here are the times, in seconds, it took 18 people to complete a puzzle.

|     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|
| 32  | 15  | 28  | 26  | 35  | 51  |
| 44  | 56  | 26  | 33  | 36  | 40  |
| 42  | 37  | 33  | 45  | 42  | 39  |

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

**Key:**

(3 marks)

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**5** Harriet works 42 hours a week.

She gets paid £9.12 for each hour she works.
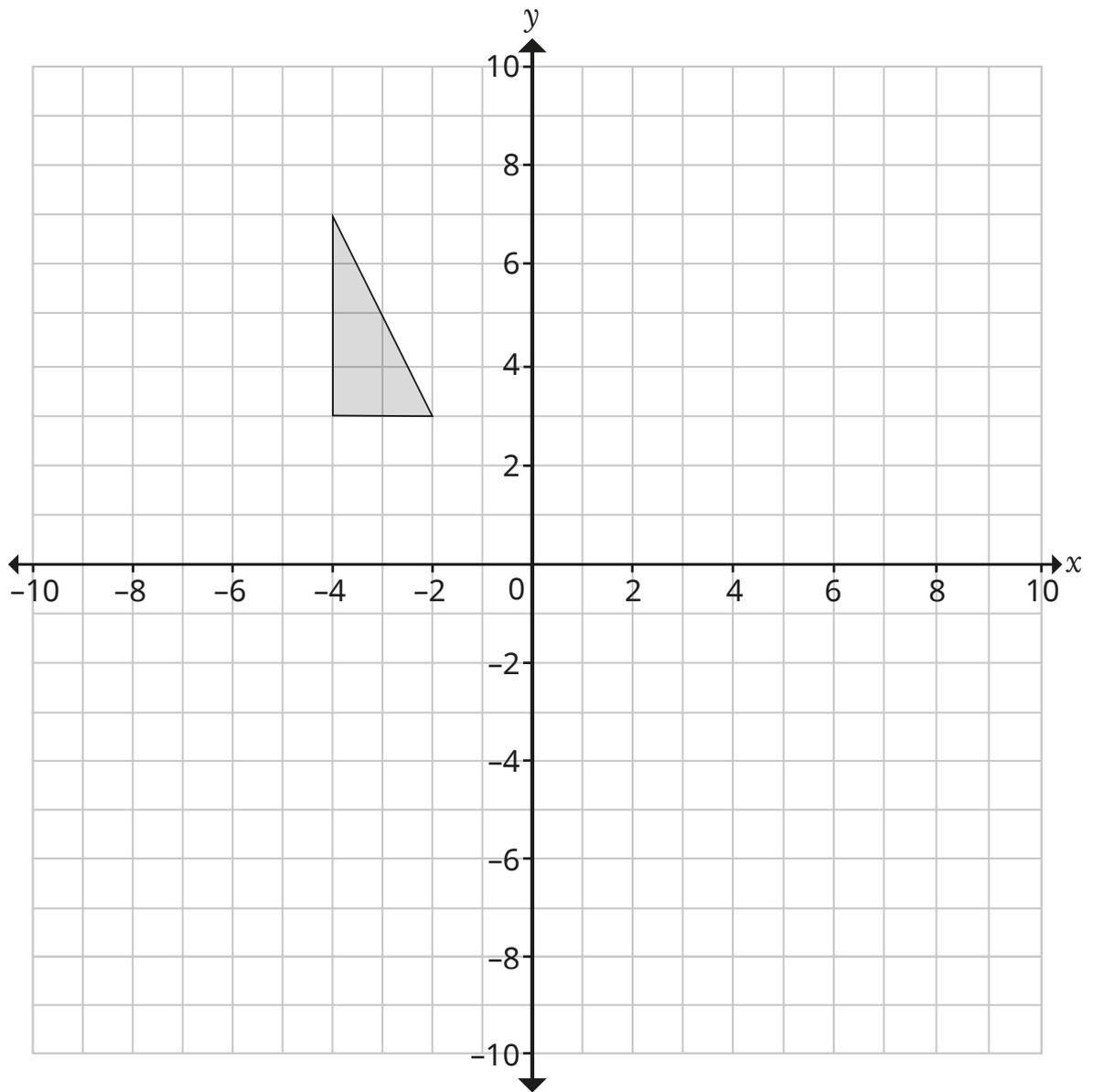
**a)** Estimate the amount Harriet gets paid in a week.

_____

**b)** Is your answer to part a) an underestimate or an overestimate?

Give a reason for your answer.

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**6**   Reflect the triangle in the line $y = 1$



(2 marks)

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**7**    Solve $7n > 3n + 10$

(2 marks)

**8**    Work out the difference between 30% of 80 and $\frac{4}{7}$ of 35

(3 marks)

**9** Write 240 as a product of its prime factors.

(2 marks)

**10** Alex and Mo decide to start saving money.

Alex saves £25 every month.

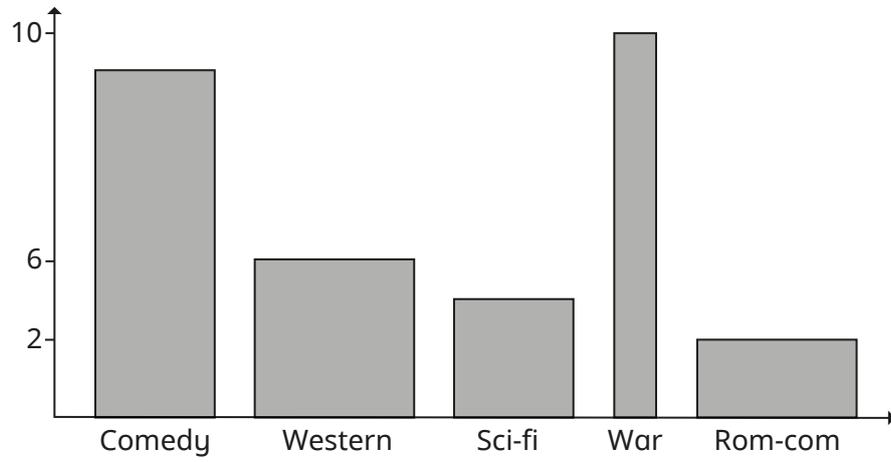**a)** How much will Alex have saved in 5 years?

(2 marks)

Mo saves £30 a month.

**b)** How long will it take Mo to save £600?

(2 marks)

**11** Annie draws a bar chart to show some people's favourite type of films.

Write two criticisms of the bar chart.

First criticism:



Second criticism:

**12 a)** Write $4.31 \times 10^4$ as an ordinary number.

_____

**b)** Write 0.00652 in standard form.

_____

**c)** Calculate $(9.6 \times 10^4) \div (3 \times 10^{-2})$.
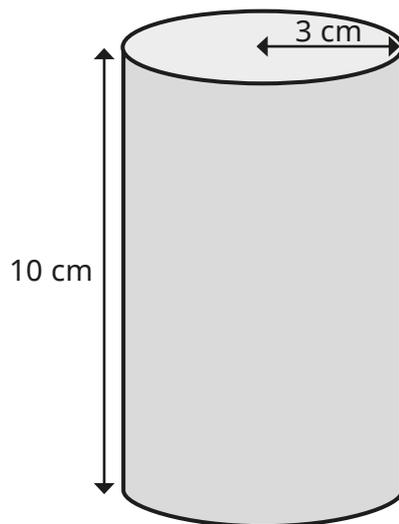
Give your answer in standard form.

_____

**13** The mass of 500 leaflets is 8 kg.

Work out the mass of 600 leaflets.

_____

**14 a)** The volume of a cube is 64 cm³

How long are the edges of the cube?

_____ cm

**b)** A cylinder has a radius of 3 cm and a height of 10 cm.

Use π = 3 to show that the volume of the cylinder is less than 1 litre.



10 cm

3 cm

1 litre = 1000 cm³
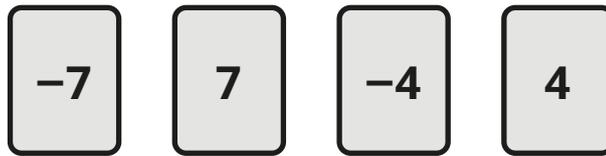
**15** A theatre club has 120 members.

The club members are either male or female.

53 of the club members are male.

25 of the 60 members who are under 18 are male.

Complete the frequency tree.
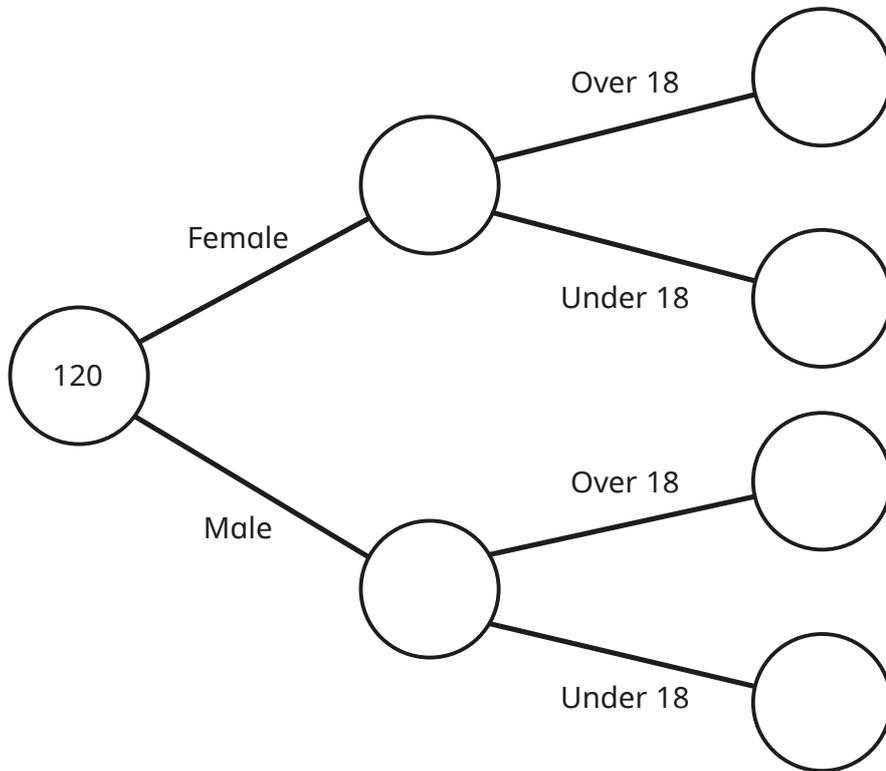
(2 marks)

**16 a)** Here are four numbers.

| −7 | 7 | −4 | 4 |

Write one of these numbers in each box to make a correct calculation.

$$\boxed{\phantom{0}} - \boxed{\phantom{0}} = -11$$

**b)** Work out the product of −3 and −4

_____

**17** Convert 850 metres into kilometres.

_____

**18**

$$f = 7 \text{ and } g = 8$$
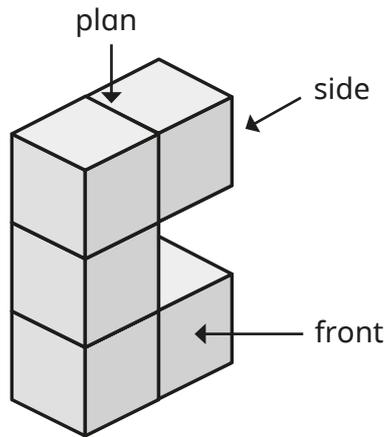
Work out the values of:

**a)** $3f - 2g$

(2 marks)

**b)** $\frac{1}{2}g^2$
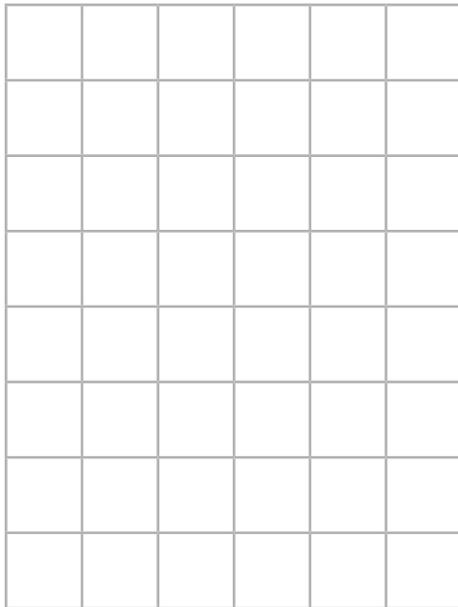
(2 marks)

**19** Write down the value of cos (0°).

(1 mark)

**20** The diagram shows a solid made by joining five cubes.
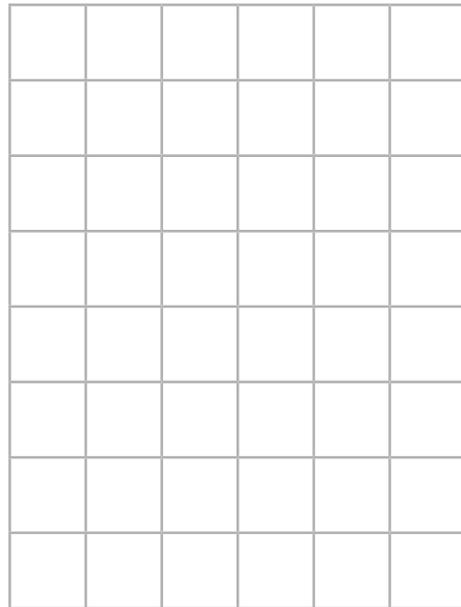


On the centimetre grids, draw the plan and the side elevation for the solid.

plan                         side



(2 marks)

**21** Michael is paid £1600 per month.

He is going to get a 3% increase in the amount he is paid.

Work out how much money Michael will be paid per month after the increase.

_____

(2 marks)

**22** A piece of metal has a mass of 780 g and a volume of 60 cm$^3$

Work out the density of the metal.

_____ g/cm$^3$

(2 marks)

**23** Write the values in order of size.

Start with the smallest value.

$$65\% \qquad \frac{3}{5} \qquad 0.62 \qquad 0.8 \qquad \frac{612}{1000}$$

**24** Here are the first five terms of an arithmetic sequence.

$$-6, \quad -2, \quad 2, \quad 6, \quad 10 \dots$$

Find an expression, in terms of $n$, for the $n$th term of this sequence.

**25 a)** Work out $\frac{5}{8} - \frac{3}{10}$

_____

**b)** Work out $2\frac{1}{5} \times \frac{5}{9}$

Give your answer as a mixed number in its simplest form.

_____

**26** A spinner can land on red, green, blue, yellow or purple.

The probabilities of the spinner landing on red and purple are shown in the table.

| Colour | red | green | blue | yellow | purple |
|---|---|---|---|---|---|
| Probability | 0.24 | | | | 0.25 |

The probabilities of the spinner landing on green, blue or yellow are equal.

Complete the table.

**27** Scott has half as much money as Tom.

Dora has three times as much money as Tom.

**a)** Write the ratio of Scott's money : Tom's money : Dora's money in its simplest form.

_____

Altogether Scott, Tom and Dora have £450
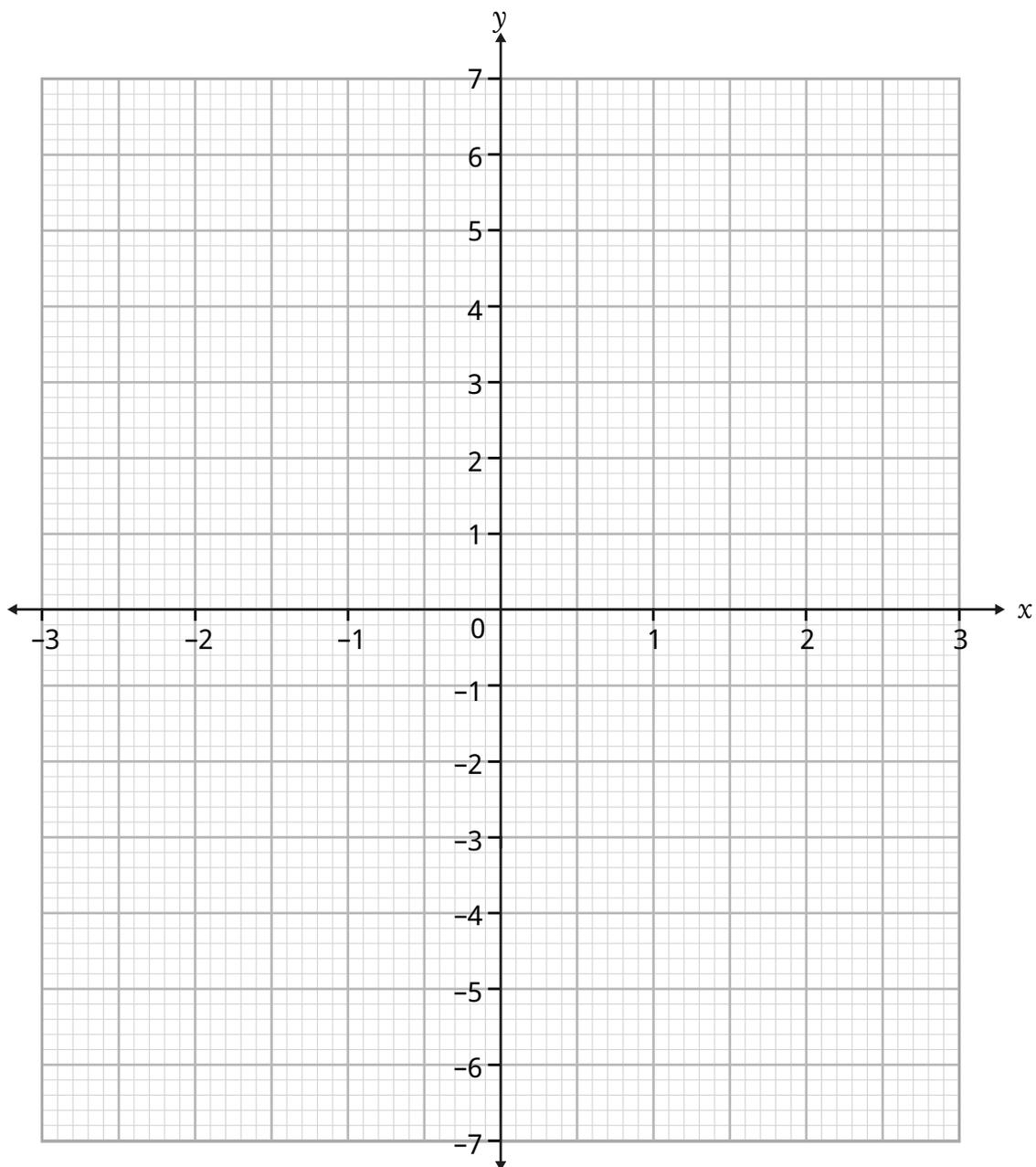
**b)** How much money does Tom have?

_____

**28**  **a)** Complete the table of values for $y = x^2 + x - 5$

| $x$ | −3 | −2 | −1 | 0 | 1 | 2 | 3 |
|---|---|---|---|---|---|---|---|
| $y$ |  |  |  | −5 |  |  | 7 |

(2 marks)

**b)** On the grid, draw the graph of $y = x^2 + x - 5$ for values of $x$ from −3 to 3



(2 marks)

**29** Three of the interior angles of a pentagon are 115°, 120° and 125°.

The other two angles are equal.

Find the size of the other two angles.

_____ °

(3 marks)

**30** Miss Ahmed is driving along a motorway that has a speed limit of 70 mph.

In 20 minutes, she travels 18 miles.

Is Miss Ahmed's average speed during this period greater or less than the speed limit?

You must show your working.

_____

(3 marks)

**31** Solve $x^2 + x - 12 = 0$

(2 marks)

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