

Print copy of Braille text (UEB)

WJEC GCSE 3300U40-1

Mathematics

Unit 2: Calculator-Allowed

Intermediate Tier

Wednesday 11 June 2025 – Morning

1 hour 45 minutes **plus your additional time allowance****ADDITIONAL MATERIALS**

You must have: Calculator, tactile ruler and protractor, pair of compasses and drawing equipment e.g. geometry board, rubber mat, mapping pins, rubber bands, drawing stylus and spur wheel.

ITEMS INCLUDED WITH QUESTION PAPER

- **A separate Formula List.**
- **A separate Diagram Booklet.**
- **Model for Question 20**
- **Cut out shapes for Question 6 (b).**

INSTRUCTIONS TO CANDIDATES

- **On your paper**, write your name, centre number and candidate number.
- Answer ALL the questions **on your paper**.
- Take π as 3.14 or use the π button on your calculator.

INFORMATION FOR CANDIDATES

You should give details of your method of solution when appropriate.

Unless stated, diagrams are not drawn to scale.

Scale drawing solutions will not be acceptable where you are asked to calculate.

The number of marks is given in brackets at the end of each question or part-question.

In question 8, the assessment will take into account the quality of your linguistic and mathematical organisation, communication and accuracy in writing.

1. Using ONLY the numbers listed below,

120 121 122 123 124 125 126

write down

(a) a square number,

Ans: ____ [1 mark]

(b) a cube number,

Ans: ____ [1 mark]

(c) a multiple of 14

Ans: ____ [1 mark]

2. Use the formula $18x + 5y = t$ to find the value of y when $x = 2.5$ and $t = 60$

Ans: ____ [3 marks]

3. (a) Calculate $\sqrt{12.3 - 3.4} + 15.7^2$

Give your answer correct to 1 decimal place.

Ans: ____ [2 marks]

(b) Find 13.5% of 63

Ans: ____ [2 marks]

4. Look at the diagram for Question 4 in the separate Diagram Booklet. The diagram shows five quadrilaterals: Square, Trapezium, Rhombus, Kite and Parallelogram.

Which ONE of the quadrilaterals has

- rotational symmetry of order 2, AND
- 2 lines of symmetry?

Choose the correct shape from the following list.

- A. Square
- B. Trapezium
- C. Rhombus
- D. Kite
- E. Parallelogram

Ans: ____ [1 mark]

5. Look at the three lengths of time given below:

1 day and 14 hours
2 days and 3 hours
73 hours

Calculate the mean of the three lengths of times.
Give your answer in days and hours.

Ans: The mean = ____ days and ____ hours [4 marks]

6. (a) Look at the diagram for Question 6 (a) in the separate Diagram Booklet. The diagram shows shape A and shape B on a square grid.

Describe the enlargement of shape A onto shape B.

Ans: ____ [2 marks]

(b) Look at the diagram for Question 6 (b) in the separate Diagram Booklet. The diagram shows a shape on a coordinate grid.

Translate the shape 3 squares to the right and 5 squares down.

A cut out shape is available for this question. [1 mark]

7. (a) Look at the diagram for Question 7 (a) in the separate Diagram Booklet.
The diagram shows some tiles in part of a tessellation.
The tiles are all identical regular hexagons.
Each of the interior angles is 120°

Explain why the tiles tessellate.

You must give a reason, based on angle facts, for your answer.

Ans: ____ [1 mark]

(b) Explain why tiles that are identical REGULAR PENTAGONS will not tessellate.

You must show working to support your explanation.

Ans: ____ [4 marks]

8. IN THIS QUESTION, YOU WILL BE ASSESSED ON THE QUALITY OF YOUR ORGANISATION, COMMUNICATION AND ACCURACY IN WRITING.

Look at the diagrams for Question 8 in the separate Diagram Booklet.

There are two diagrams:

Diagram 1 is a pie chart.

Diagram 2 is a pictogram.

Two groups of people, Group A and Group B, took part in Adam's survey.
Adam asked each person this question:

"From the colours Red, Blue and Green, which is your favourite colour?"

There are 92 people in Group A.

The results for Group A are shown in the pie chart (Diagram 1)

The results for Group B are shown in the pictogram (Diagram 2)

Adam chose one person at random from all the people in both groups.
What is the probability that this person chose GREEN?

Ans: ____ [5 marks + 2 marks OCW]

9. Look at the diagram for Question 9 in the separate Diagram Booklet.
The diagram shows six blocks.

In the diagram, the expression in each block in the top two rows is found by using the following rule:

“The expression in any block is the sum of the expressions in the two blocks below it.”

Some expressions are already shown.

Use the rule to fill in the empty blocks in the diagram.

You must simplify your answers.

Ans: (i) ____ (ii) ____ (iii) ____ [3 marks]

10. Look at the diagram for Question 10 in the separate Diagram Booklet.
The diagram is NOT drawn to scale.

The diagram shows a sketch of a circle that fits exactly inside a square.

The radius of the circle is 5 cm.

Calculate the total area of the shaded regions.

Give your answer as a decimal.

You must show all your working.

Ans: Total area of the shaded regions = ____ [4 marks]

11. Look at the diagram for Question 11 in the separate Diagram Booklet.

The diagram shows two towns, A and B, on a map.

The scale of the map is 1 cm represents 4.5 km.

(a) Find the straight-line distance from town A to town B.

Give your answer in kilometres.

Ans: The straight-line distance from A to B = ____ km [2 marks]

(b) Find the bearing of town A from town B.

Ans: ____ [1 mark]

(c) On the map, shade the region containing all the points that are:

- closer to town A than to town B, AND
- less than 27 km from town B.

A spare tactile diagram and drawing film are available for this question.

Ans: ____ [4 marks]

12. Look at the diagram for Question 12 in the separate Diagram Booklet.
The diagram shows a fair spinner with sections labelled 1, 2, 3, 4 and 5

A charity is organising a game using this fair spinner.

In the game, each player spins the spinner once.

100 players each pay £x to play the game once.
Each player who gets an EVEN NUMBER on the spinner wins £3

The charity expects to make a PROFIT of £130

Find the value of x.
You must show all your working.

Ans: ____ [5 marks]

13. Make **t** the subject of the formula $7t + 5 = u$

Ans: ____ [2 marks]

14. A solution of the equation

$$x^3 + 5x = 25$$

lies between 2 and 3

Use the method of trial and improvement to find this solution correct to
1 decimal place.

You must show all your working.

Ans: ____ [4 marks]

15. (a) Look at the diagram for Question 15 (a) in the separate Diagram Booklet.
The diagram is NOT drawn to scale.
The diagram shows a triangle labelled PQR.

In the diagram:

$$PR = 19.3 \text{ cm}$$

$$QR = 16.8 \text{ cm}$$

Angle PQR is a right angle.

Calculate the length of PQ.

Ans: ____ [3 marks]

(b) Look at the diagram for Question 15 (b) in the separate Diagram Booklet.

The diagram is NOT drawn to scale.

The diagram shows a triangle labelled STU.

In the diagram:

SU = 20.5 cm

TU = 15.4 cm

Angle STU is a right angle.

Calculate the size of angle x.

Ans: ____ [3 marks]

16. $\frac{3}{7}$ of £180.60 is shared in the ratio 4:5

Calculate the value of the smaller share.

You must show all your working.

Ans: Smaller share = ____ [4 marks]

17. Look at the diagram for Question 17 in the separate Diagram Booklet.

The diagram is NOT drawn to scale.

In the diagram, the triangles ABC and DBE are MATHEMATICALLY SIMILAR.

CB = 8 cm, DB = 7.5 cm and BE = 5 cm.

Angle ACB = angle DEB.

Angle ABC is a right angle.

Calculate the length of AB.

Ans: ____ [2 marks]

18. A number has been decreased by 20% to give an answer of 84

What was the original number?

Ans: ____ [2 marks]

19. (a) Look at the diagram for Question 19 (a) in the separate Diagram Booklet.
The diagram is an incomplete tree diagram.

A bag contains 5 red balls and 4 blue balls.
Megan chooses a ball from the bag at random.
She replaces the ball in the bag.
Then she chooses a second ball from the bag at random.

Complete the tree diagram.

Ans: (i) ____ (ii) ____ (iii) ____ (iv) ____ [2 marks]

(b) Find the probability that Megan chooses two balls of the same colour.

Ans: ____ [3 marks]

20. Ask for the model for Question 20

The model is NOT made to scale.

The model is a cuboid.

The measurements of the cuboid are:

Length = 12 cm

Width = 4.5 cm

Height = x cm

The TOTAL SURFACE AREA of all 6 faces of the cuboid is 240 cm^2

Find the volume of the cuboid.

You must show all your working.

Ans: Volume of the cuboid = ____ cm^3 [6 marks]

TOTAL 80 MARKS

END OF PAPER

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DIAGRAM BOOKLET CONTENTS:

Question 4. Five quadrilaterals: Square, Trapezium, Rhombus, Kite and Parallelogram – Tactile diagram.

Question 6. (a) Shape A and shape B on a square grid – Tactile diagram.

Question 6. (b) Shape on a coordinate grid – Tactile diagram and cut out shape.

Question 7. (a) Some tiles in part of a tessellation – Tactile diagram.

Question 8. Diagram 1 is a pie chart and Diagram 2 is a pictogram – Tactile diagram.

Question 9. Six blocks with three missing expressions – Tactile diagram.

Question 10. Sketch of a circle that fits exactly inside a square – Tactile diagram.

Question 11. Town A and town B on a map – Tactile diagram, spare diagram and drawing film.

Question 12. A fair spinner with sectors labelled 1, 2, 3, 4 and 5 – Tactile diagram.

Question 15. (a) Triangle labelled PQR: calculate the length of PQ – Tactile diagram.

Question 15. (b) Triangle labelled STU: calculate the size of angle x –
Tactile diagram.

Question 17. Triangle ABC and DBE: Calculate the length of AB –
Tactile diagram.

Question 19. (a) Incomplete tree diagram – Tactile diagram.

Question 20. Cuboid. No diagram in Braille. Model provided.

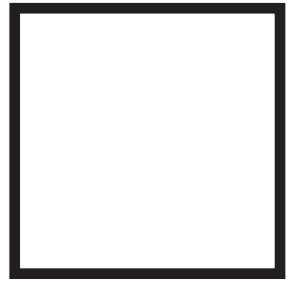
ITEMS INCLUDED WITH QUESTION PAPER

Model for Question 20 – Cuboid.

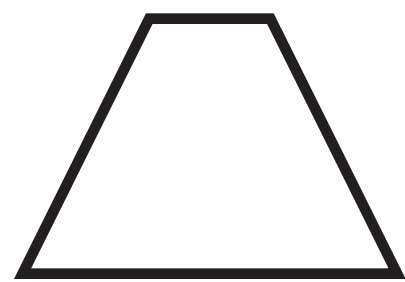
Cut out shape for Question 6 (b).

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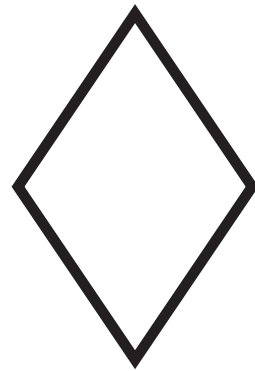
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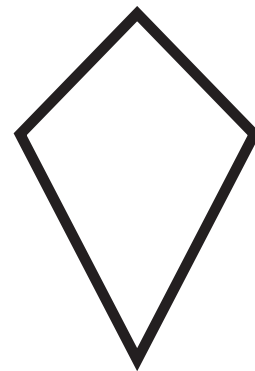
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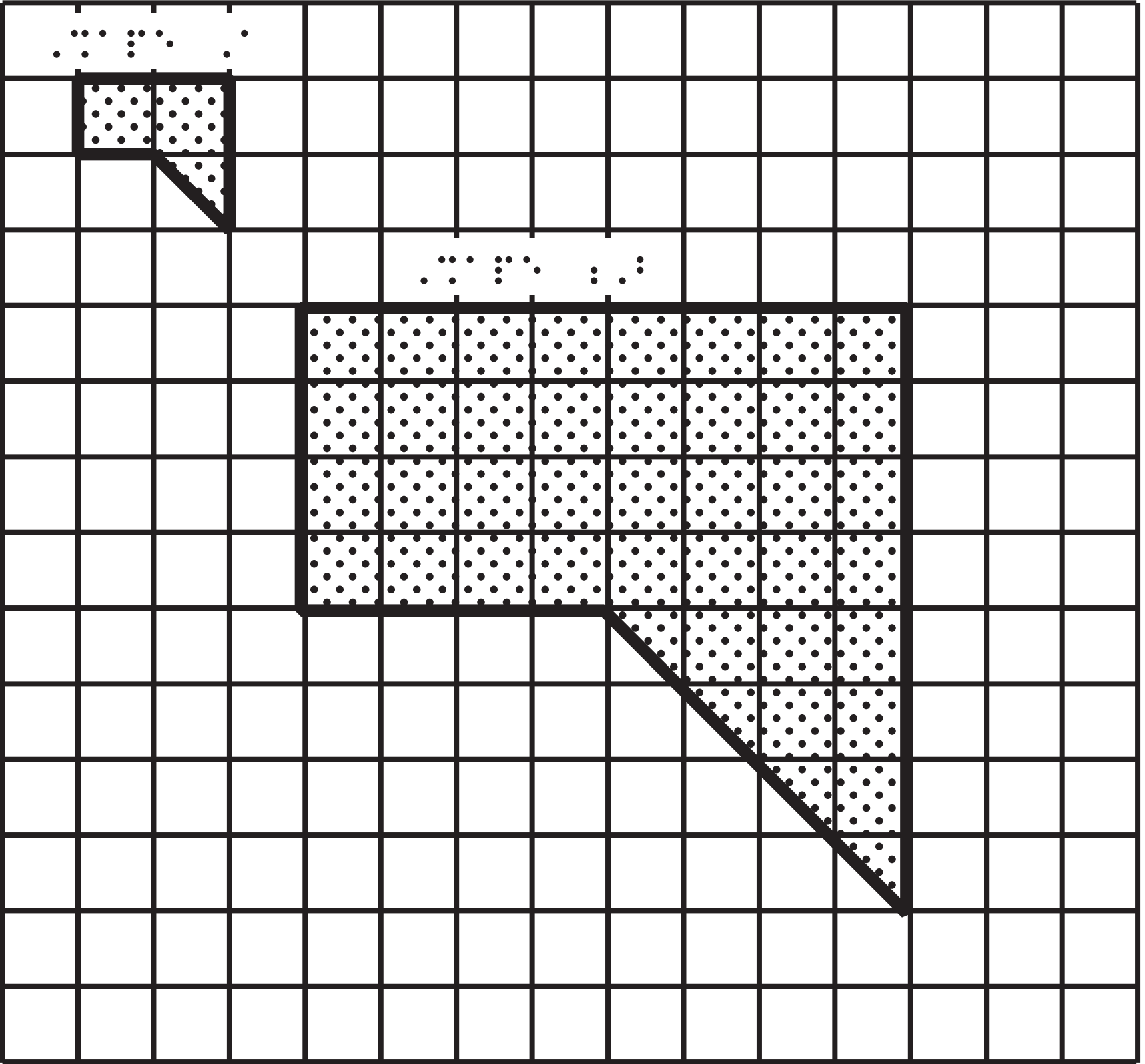


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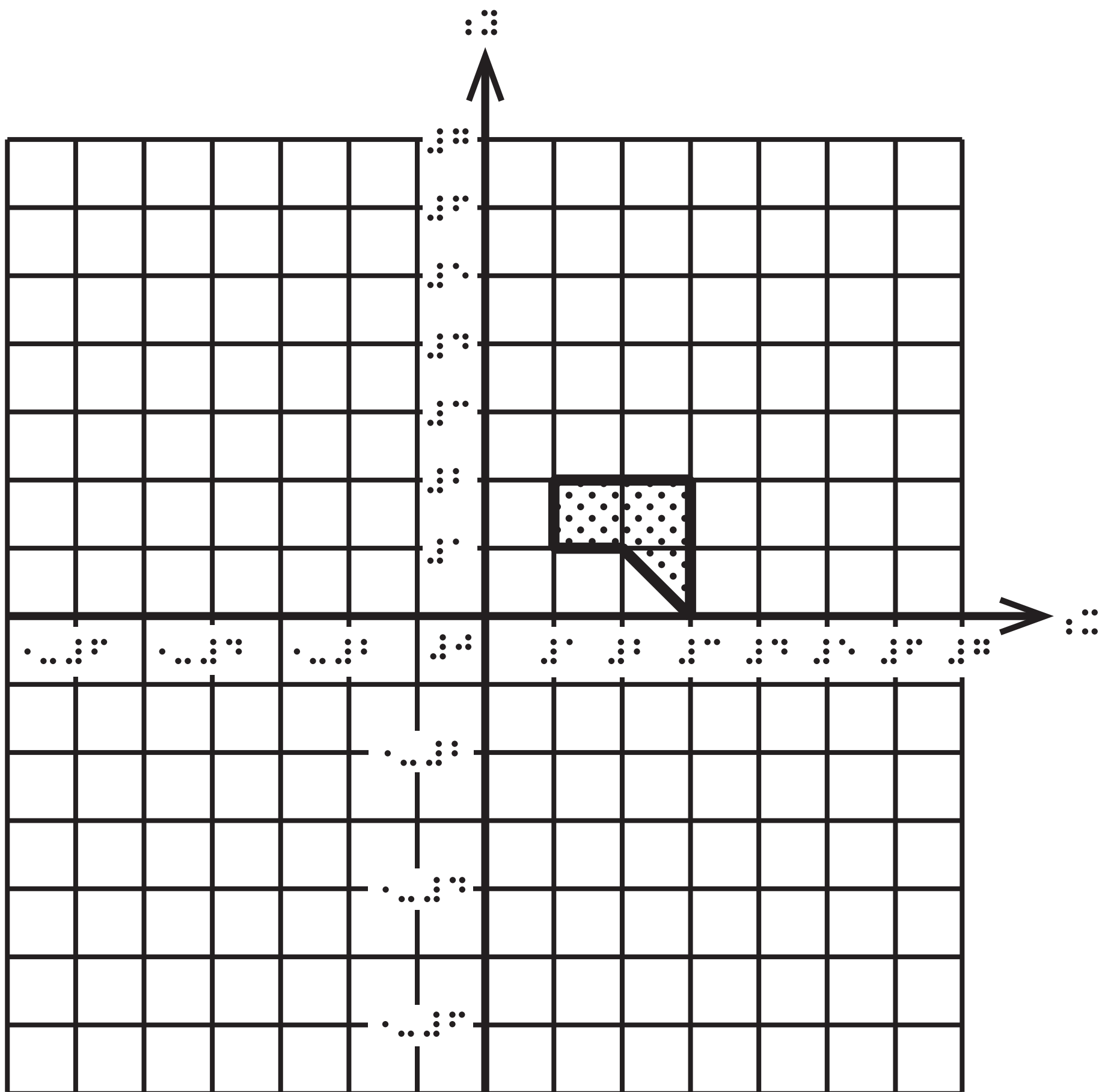


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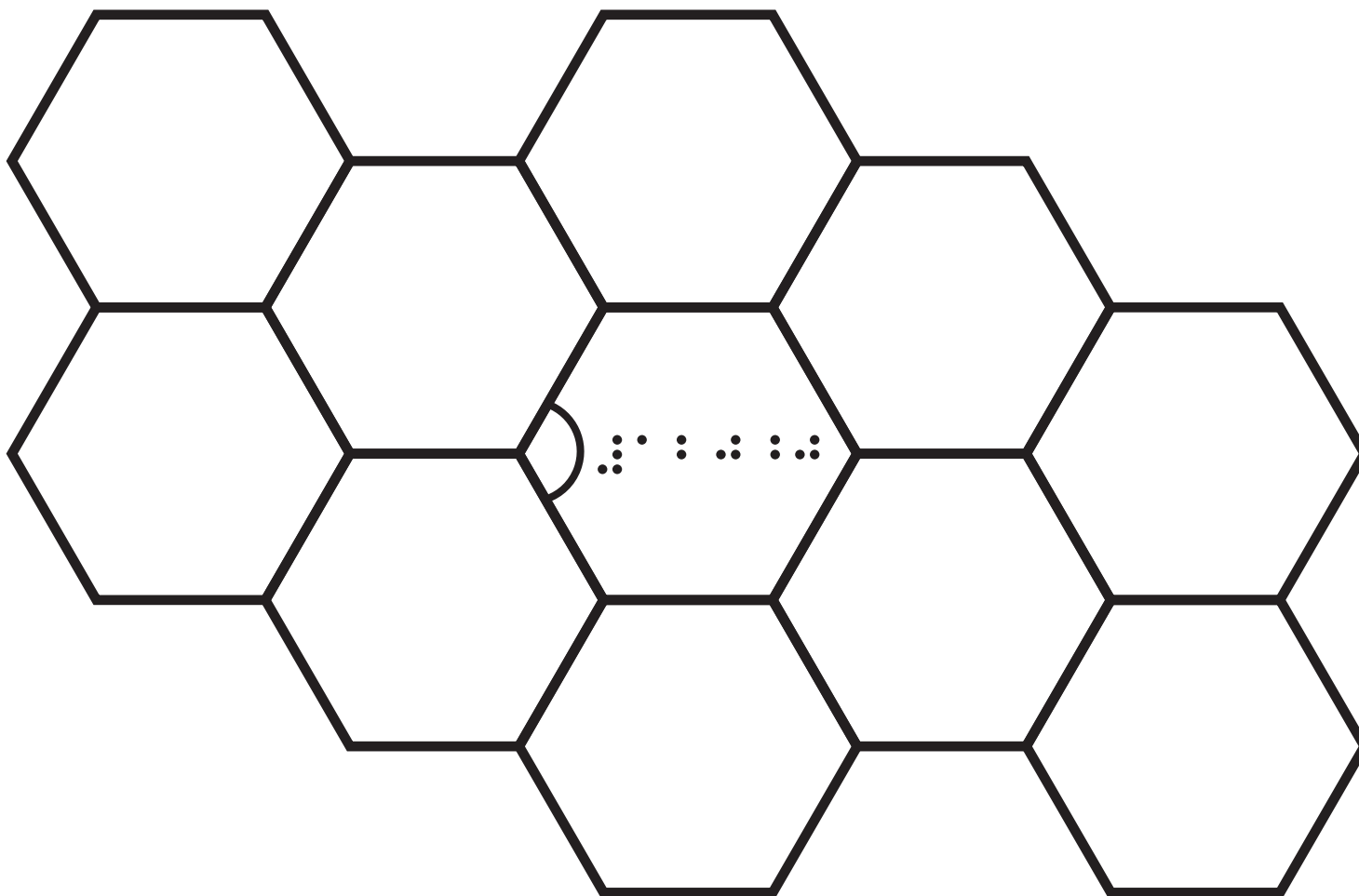


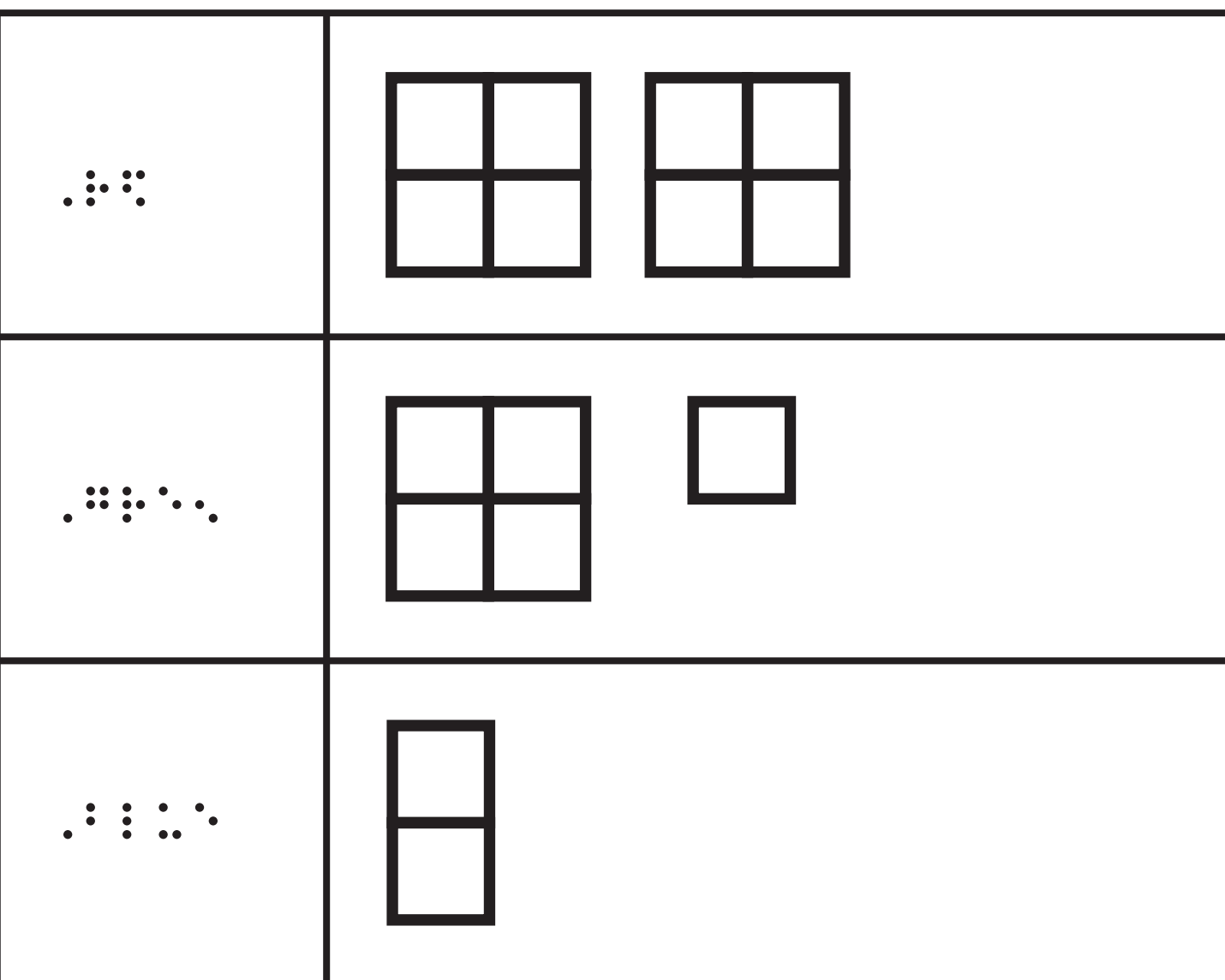
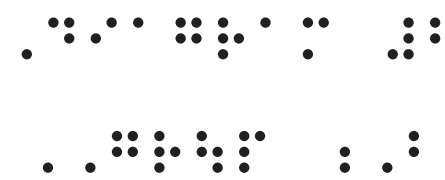
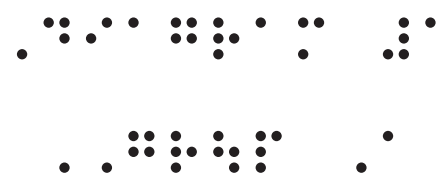


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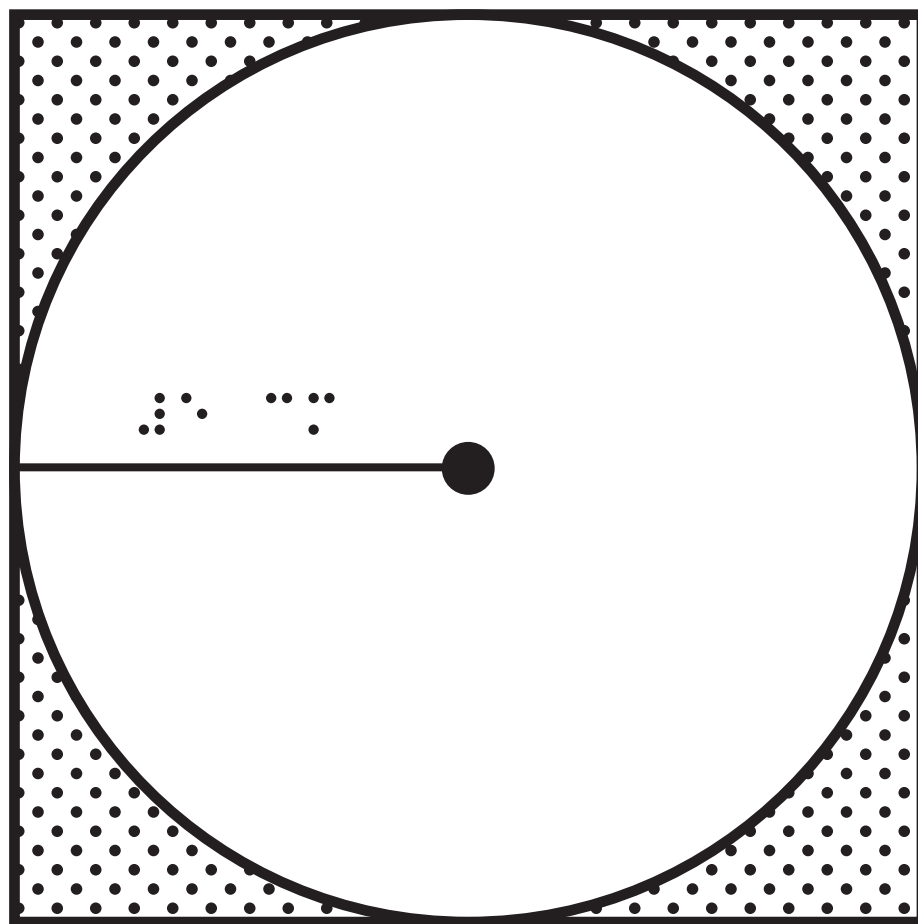
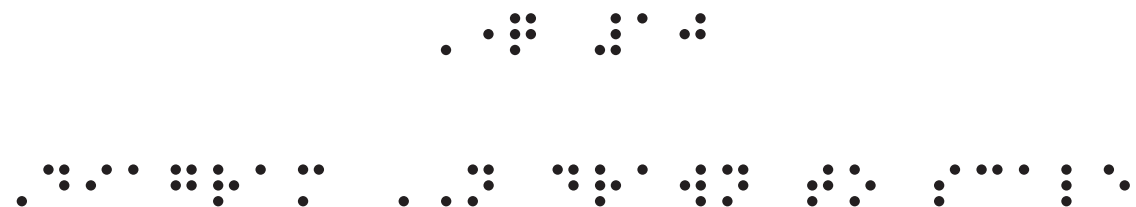
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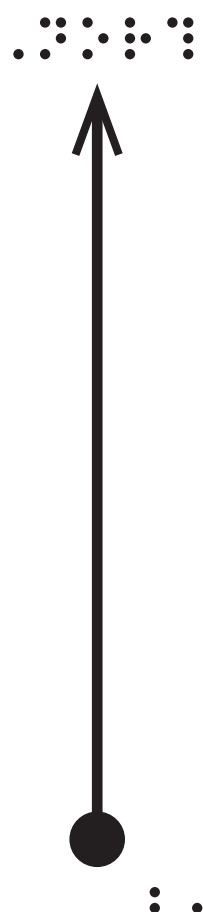
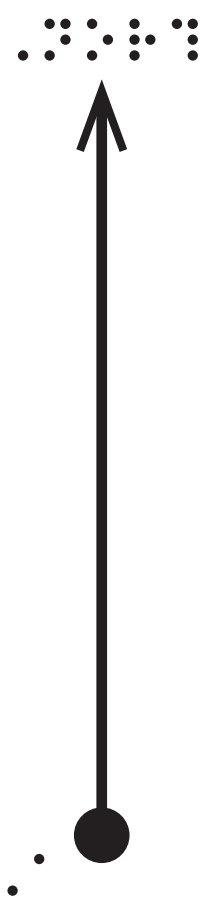
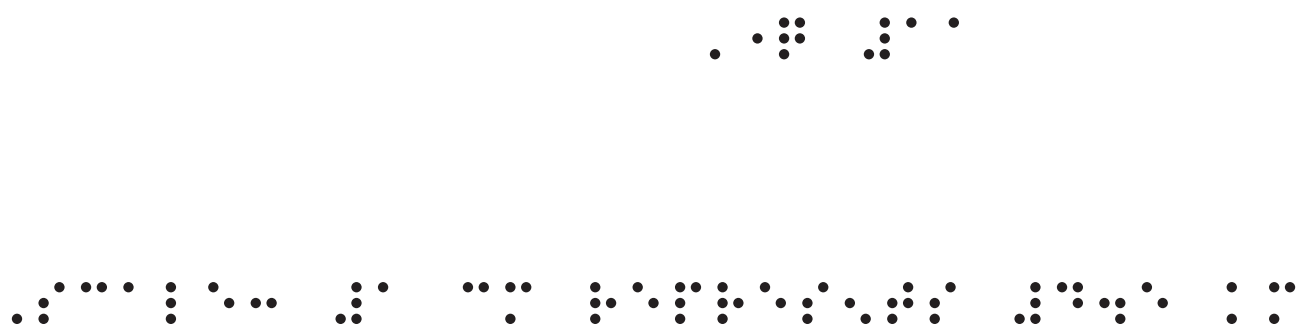
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