RICH MATHEMATICAL TASK BOOKLET

MEASUREMENT

YEAR 5/6
ODD YEARS

Copy Masters

Task 1

Tiana has made some pictures for her family and would like to buy frames for them.

Unfortunately, she has broken her ruler so you will need to use this broken ruler to find out the perimeter of the pictures for the frames.

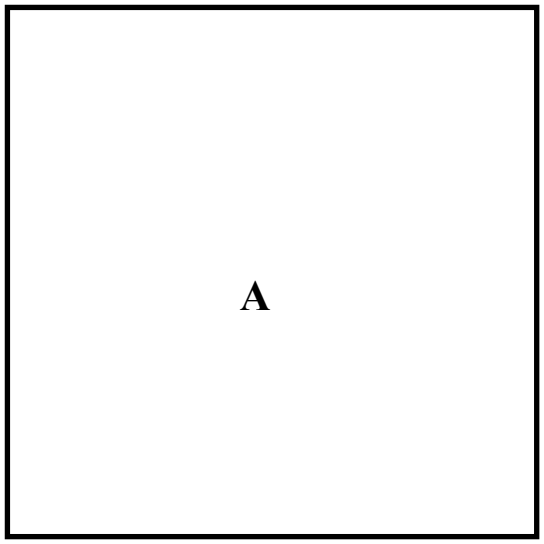
Can the pictures have the same perimeter?

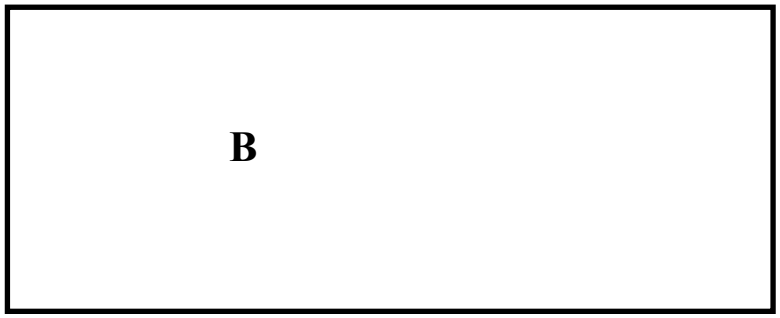
A) Record the estimate and measurement in centimetres. Estimate the perimeter first. Use the broken ruler to find the perimeter and record the measurement:
Estimate –
Perimeter –

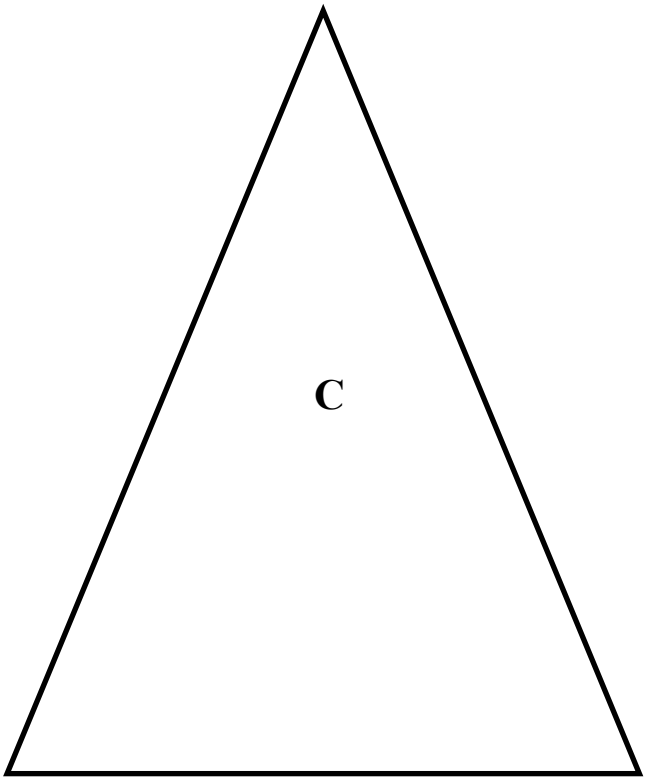
B) Record the estimate and measurement in centimetres. Estimate the perimeter first. Use the broken ruler to find the perimeter and record the measurement:
Estimate –
Perimeter –

C) Record the estimate and measurement in centimetres. Estimate the perimeter first. Use the broken ruler to find the perimeter and record the measurement:
Estimate –
Perimeter –

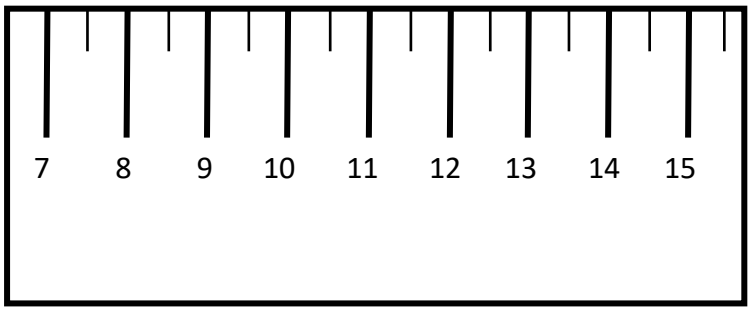
Task 1 (photo frames)

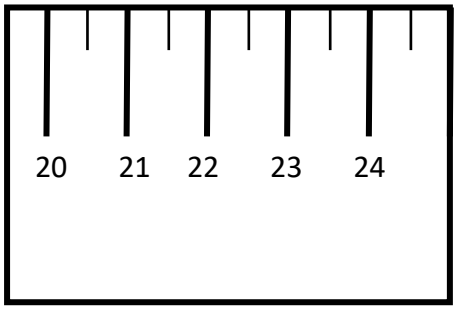


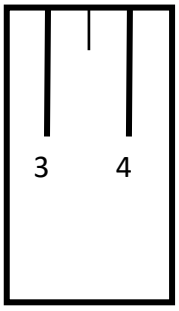


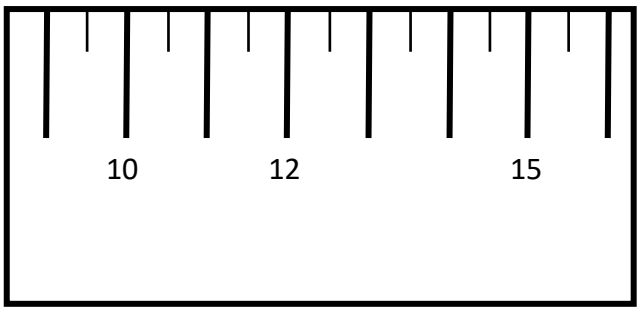


Task 1 (resource)









Task 1 (independent)

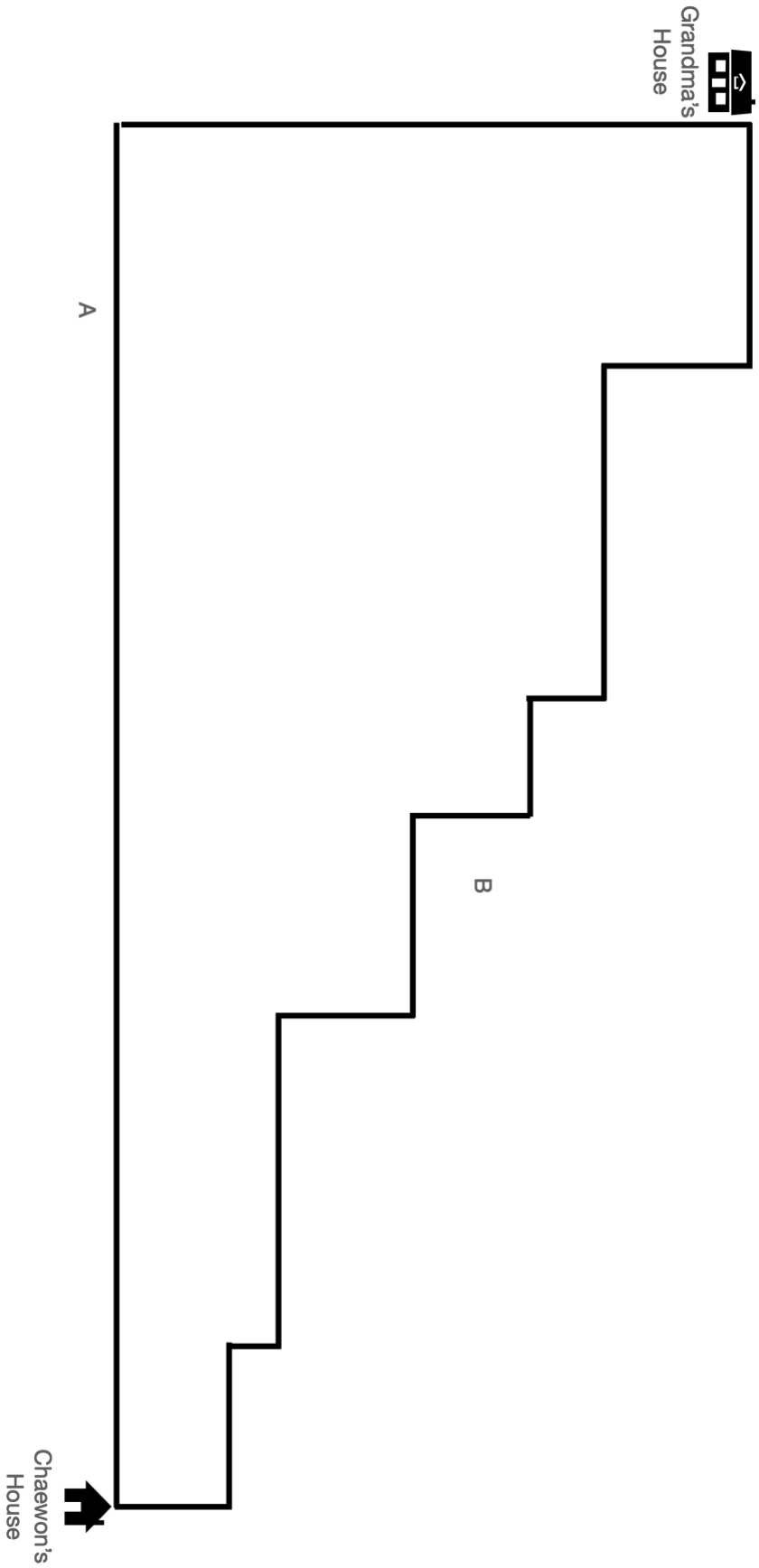
Chaewon takes an Uber to visit her grandmother each weekend. The Uber driver usually takes the same route (marked A) and this costs $10. The Uber driver took a different route (marked B) one weekend.

Do you think the different route will cost Chaewon more than $10 because the driver went a longer distance?

Write your prediction down and then use the equipment to measure and check.

Year 5-6 Copy Masters: Measurement.

Task 1 (independent)



Task 2

Estimate how long the _____ is and record the estimate and measurement unit.
Estimate -

Use a measuring tool to measure the length and record the measurement count and measurement unit.
Measurement –
Convert the measurement to a different unit.
Measurement conversion –

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Measurement –
Convert the measurement to a different unit.
Measurement conversion –

Task 2

Estimate how long the _____ is and record the estimate and measurement unit.
Estimate -

Use a measuring tool to measure the length and record the measurement count and measurement unit.
Measurement –
Convert the measurement to a different unit.
Measurement conversion –

Task 2 (independent)

Estimate the length of each object. Check your estimation with a measuring tool. Make sure you record the measurement unit.

Estimate –

Measurement –

Estimate –

Measurement –

Estimate –

Measurement –

Estimate –

Measurement –

Estimate –

Measurement –

Task 3

Auckland City Council is asking for help and suggestions for designs for a new library building. It will be built using square modules. The squares are scaled so that 1 cm represents 1 metre.

Use the squares to make different designs for the library.

Draw around the outline and record the perimeter.

What is the smallest perimeter you can make?

The council decides to put the books lining the walls so to fit the most books, they would like to have a building with the longest perimeter.

What is the longest perimeter you can make?

Task 3 (3cm x 3cm squares)

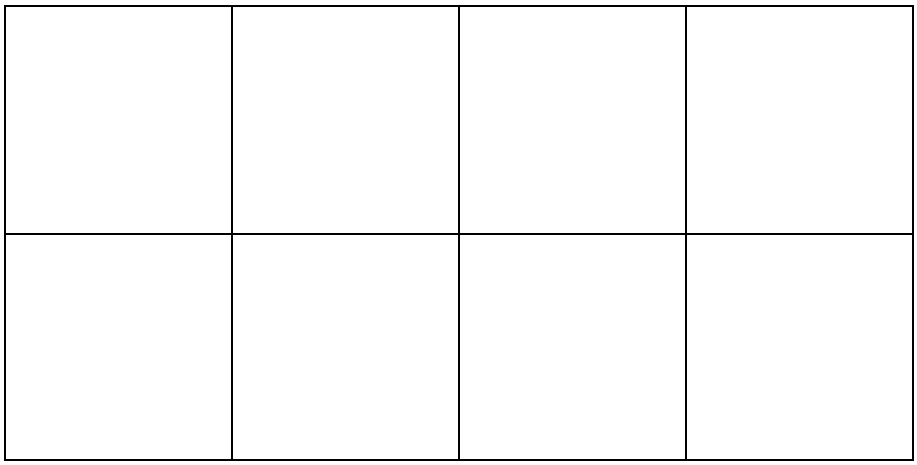
Task 3 (independent)

Auckland City Council is asking for help and suggestions for designs for a new library building. It will be built using square modules. The squares are scaled so that 1 cm represents 1 metre.

The council would like a library building with a perimeter of 36 m.

Use the squares to make different designs for the library.

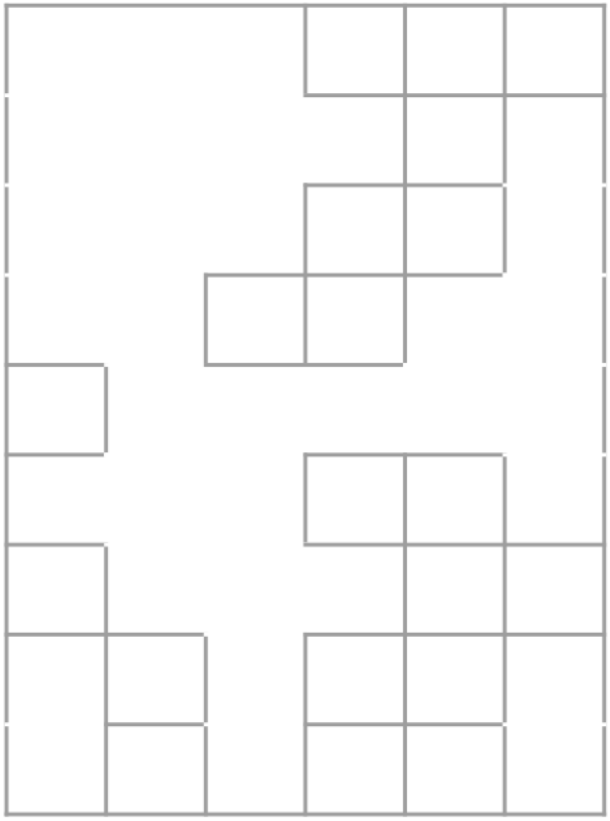
Draw around the outline and record the perimeter.

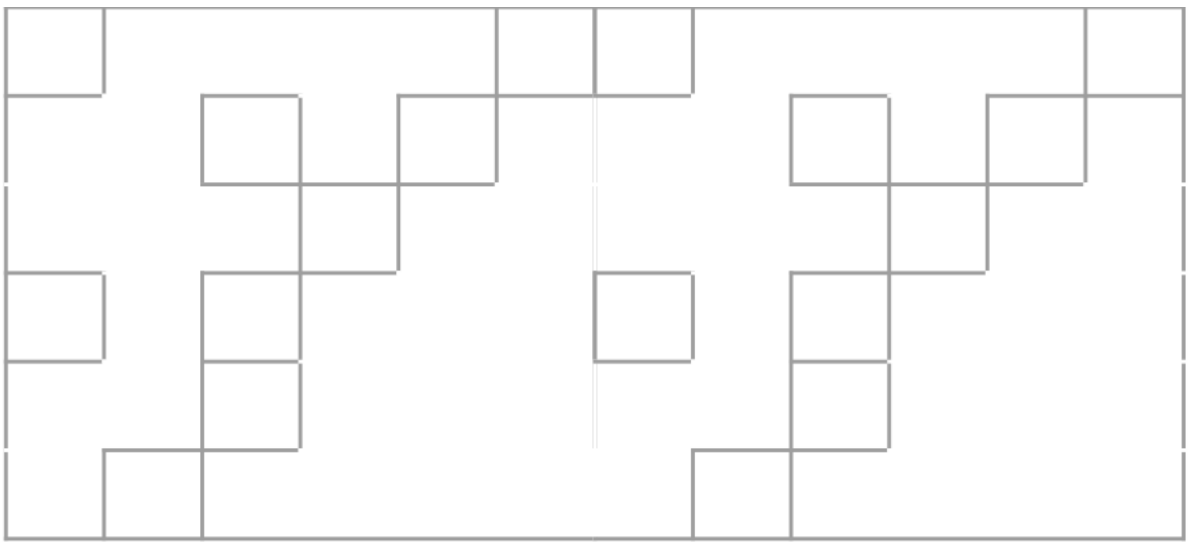


Task 4

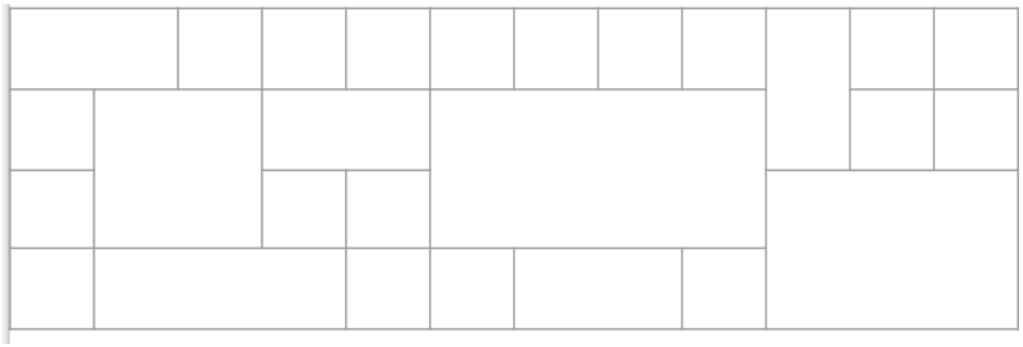
Ashok was helping his Mum work out how many tiles they needed for the bathroom walls and floor. He got distracted and didn't finish.

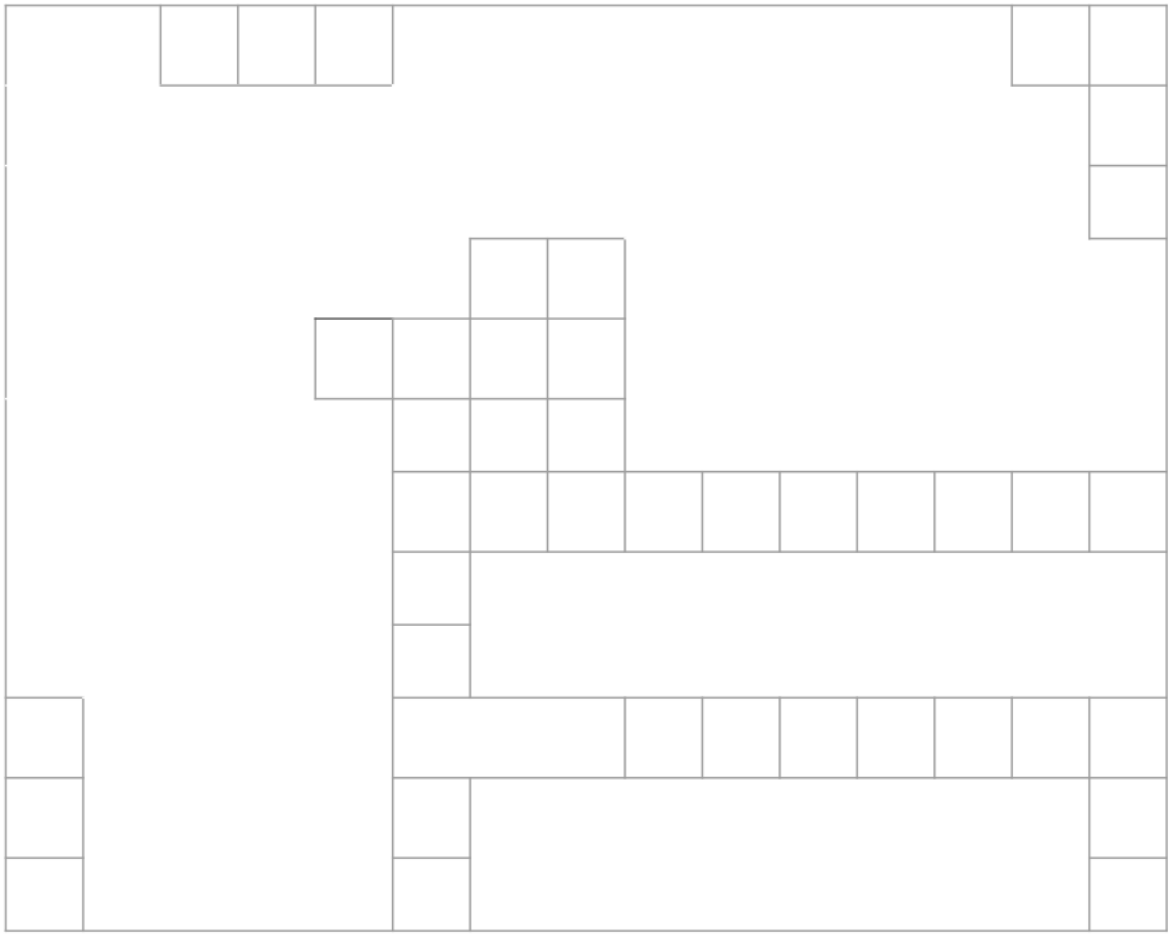
Can you help by working out a quick way to find the area and number of tiles that would be needed for each space?





Task 4 (continued)

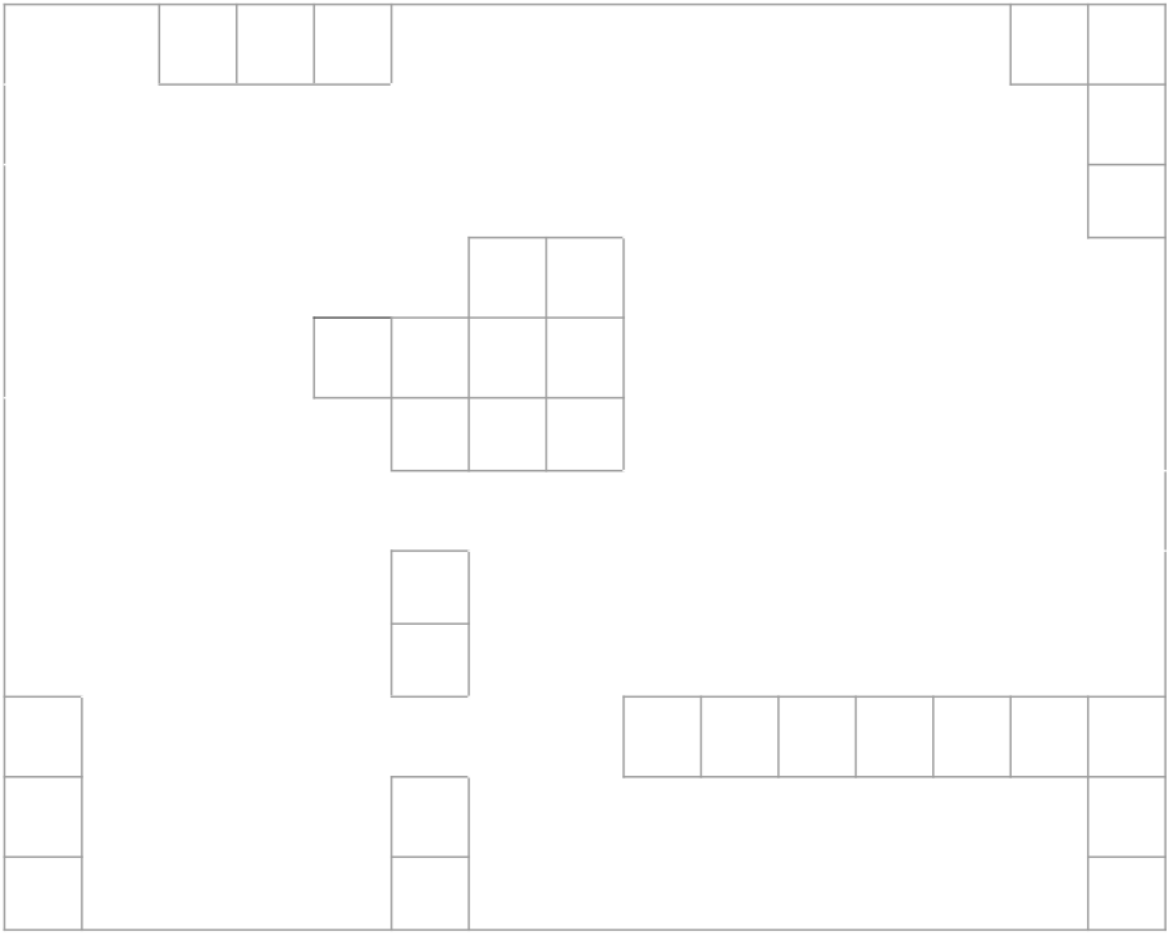




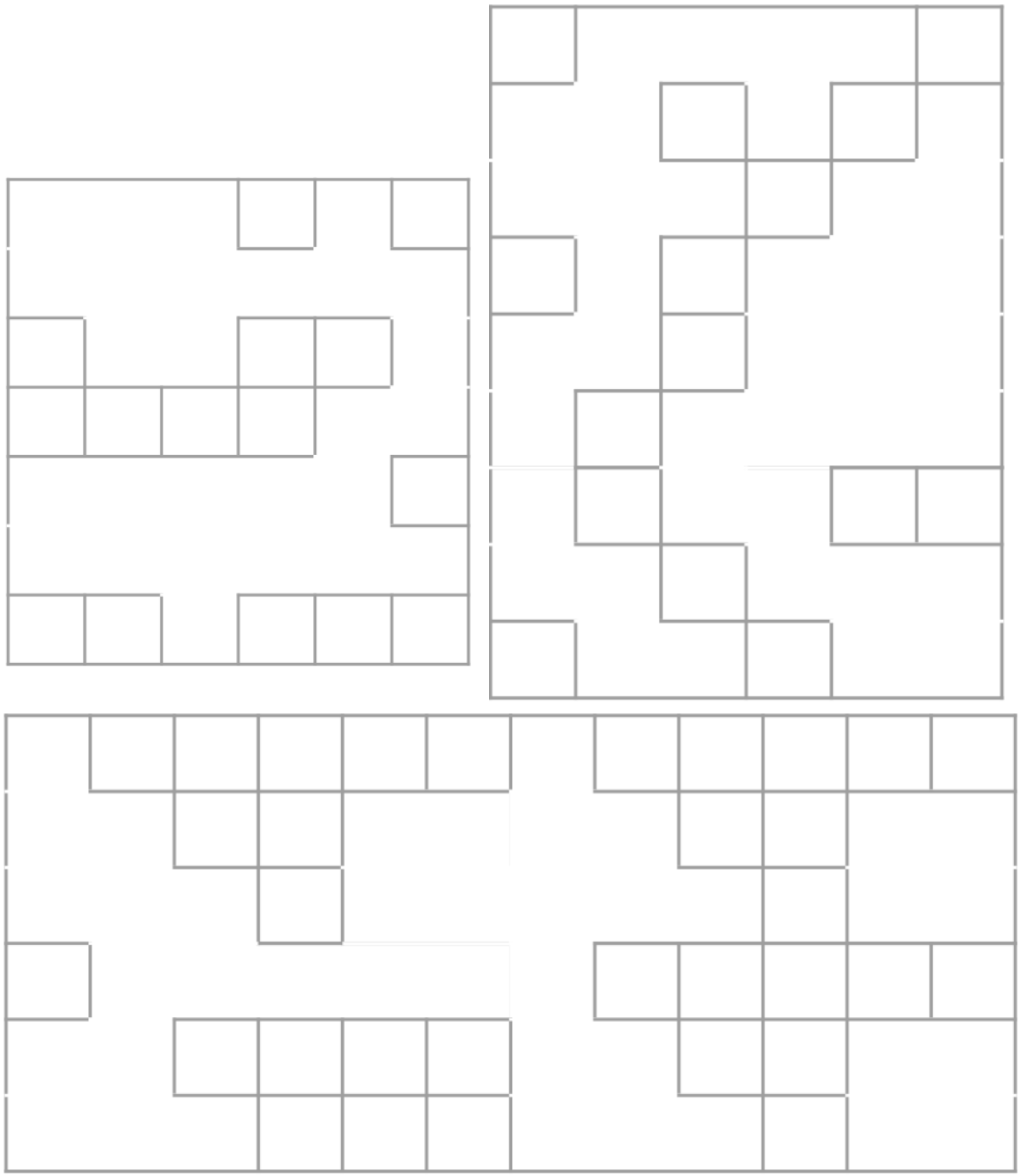
Task 4 (independent)

Ashok was helping his Mum work out how many tiles they needed for the bathroom wall. He got distracted and didn't finish.

Can you help by working out a quick way to find the area and number of tiles that would be needed for each space?



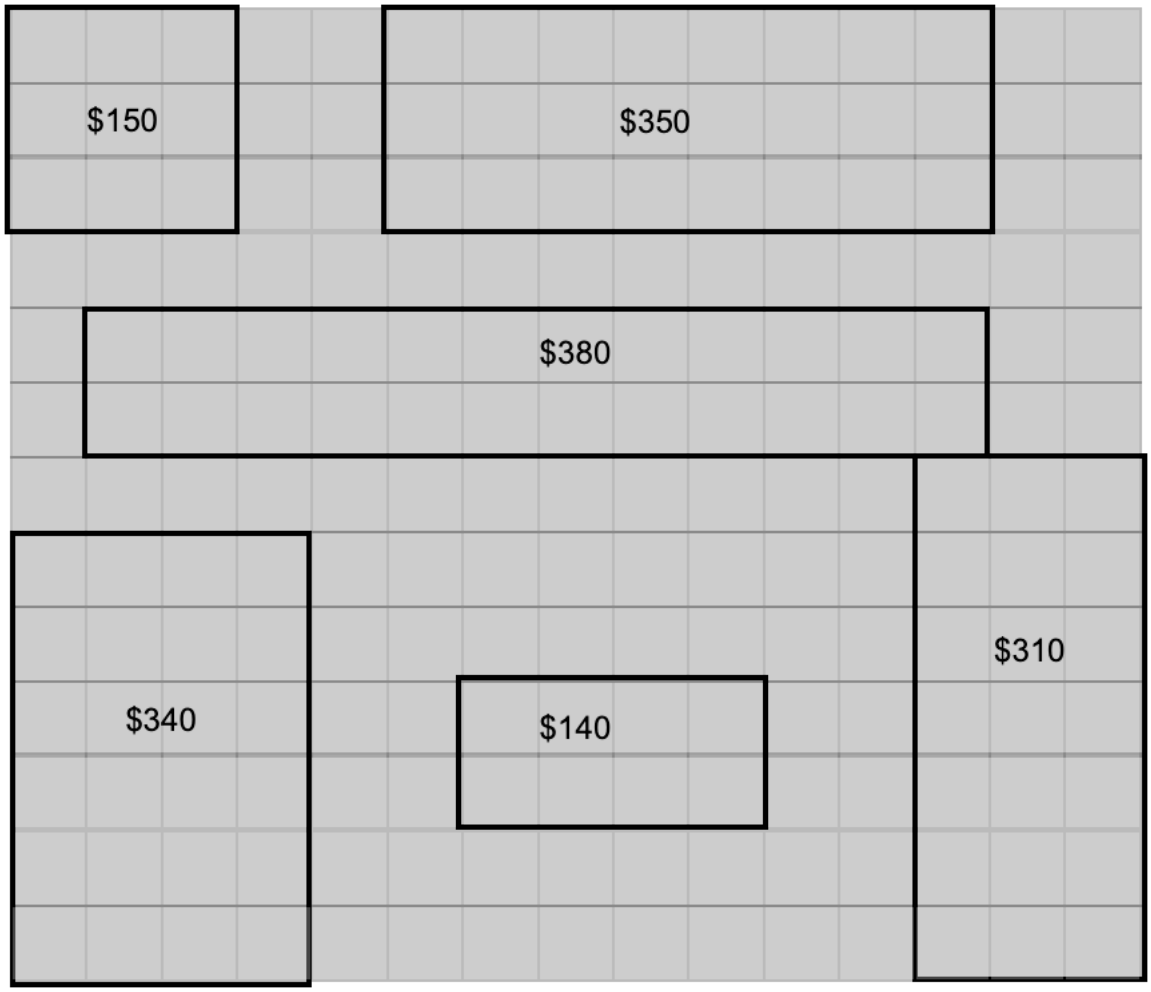
Task 5 (independent continued)



Task 5

Aotearoa Building supplies sells windows and calculates the price of these by using the area of glass needed and the perimeter of the frame needed.

Work out how they arrived at the prices of the windows below:



Task 5 (independent)

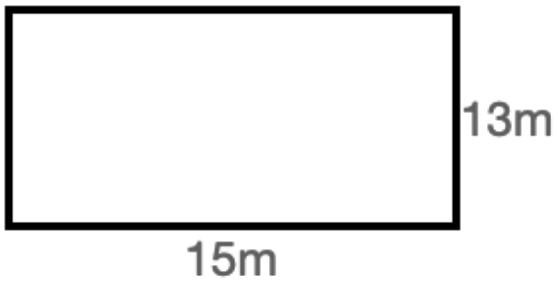
Sione is creating a togalaau with his Tama. They have fencing for a perimeter of 36 m. Create as many designs as you can and record these in a table with the measurement units.

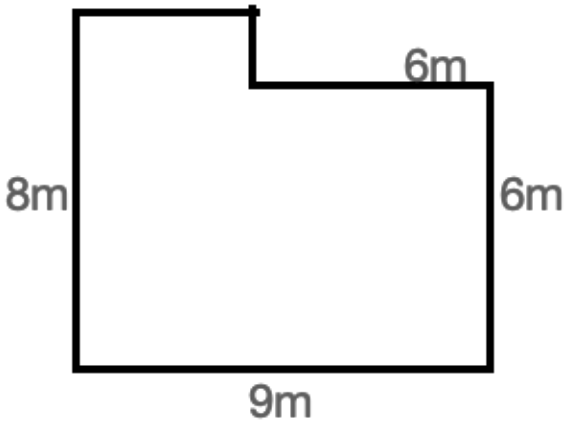
Sides	Perimeter	Area

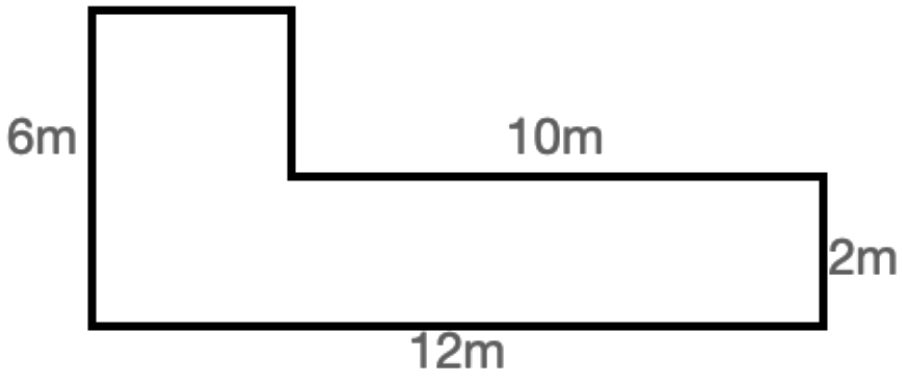
What patterns do you notice?
What togalaau design is the best? Explain why.

Task 6

Find the area and perimeter of these building designs.







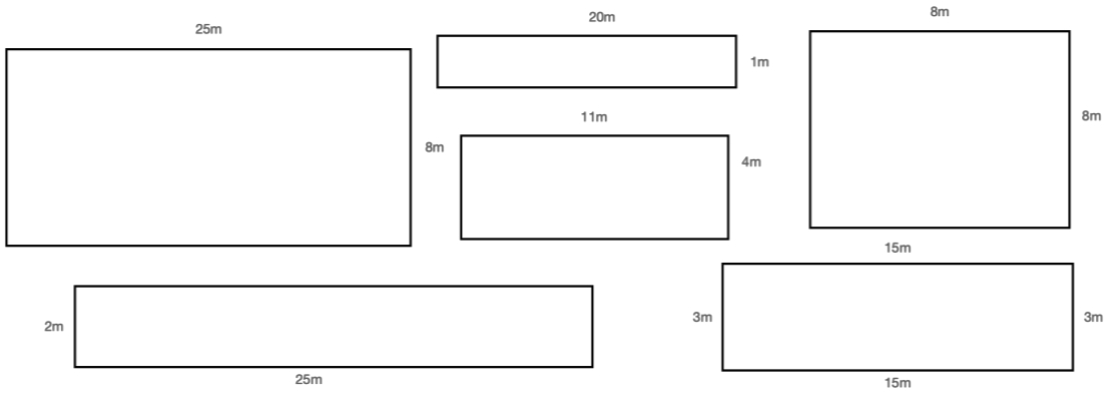
Task 6 (independent tasks)

Are these statements sometimes, never, or always true:

1) To find the perimeter of a square you can multiple the length of one side by four.
2) To find the area of a shape, you multiple the length by the width.
3) When you cut a piece off a 2D shape, you reduce the area and perimeter.

Justify your responses.

These are the possible designs for a new community swimming pool.
Can you find the perimeter and area for each design?
Select which design is the best and explain why.



Task 7

Ta'ase is sending a parcel to her family overseas. She needs a box with a volume of 10 000 cm^3

Find the volume of the boxes to see if they are big enough.

Task 7 (independent)

Measure the volume of each box.
Represent how you found the volume for each box.

Task 8

Use the 48 cubes to build as many different box-shaped (cuboid) buildings as possible.

Draw each building as a 3-D representation and label this to show how you find the volume.

Task 8 (independent)

What cuboids can you build with these dimensions?
What would be the volume for the cuboid?

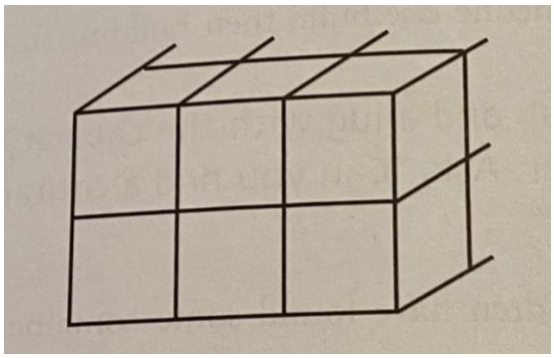
1. Length is 6 cubes; width is 3 cubes; height is 2 cubes?
2. Length is 5 cubes; width is 4 cubes; height is 3 cubes?
3. Length is 4 cubes; width is 3 cubes; height is 3 cubes?
4. Length is 8 cubes; width is 4 cubes; height is 2 cubes?
5. Length is 3 cubes; width is 2 cubes; height is 1 cube?
6. Length is 7 cubes; width is 3 cubes; height is 3 cubes?

Task 9

What is the volume of your classroom?
As part of your explanation, draw a representation to use to explain and justify your solution.

Task 9 (independent)

Melania has this picture of the front end of a rectangular box.



What might the volume of the box be?

Is there only one possible answer or more?

Explain and justify your answer.

Task 10

Find two containers that have the same capacity, will hold more than a litre but are a different shape.

Prove that they have the same or almost the same capacity. Record the capacity of each container using mL and l.

Make sure that you explain and justify your reasoning using a range of representations including a number-line.

Task 10 (independent task)

Identify the attribute being measured: Volume, capacity, mass

1. The amount of matter that makes up a sheep.
2. The amount of liquid medicine given to a human
3. The amount of space inside a shipping container
4. The space inside a tent
5. The water inside a pool
6. The amount of matter that makes up a milk tanker
7. The amount of matter that makes up a packet of rice

Task 11

Find three things which would have a total mass of 1.5 kilograms.

Draw a number line to represent the mass measure of each item and show how altogether their estimated mass is 1.5 kilograms.

Now use the scales to check the mass of each object against your estimation.

Draw another number line to represent the mass measure of each item from the scale and show the individual and combined mass.

How close to 1.5 kilograms was your estimation?

Task 11 (independent)

Solve the first multiple choice questions and then write 10 more of your own.

A marble will have a mass of about
1 g 50 mg 5 g

A man could have a mass of about
80 kg 8 kg 8 g

A truck could have a mass of about
500 kg 5 t 500 g

A large whale will have a mass of about
20 g 50 kg 50 t

A teaspoon will have a capacity of about
300 ml 5 ml 5 l

A cup of water will have a capacity of about
350 ml 5 ml 1 l

Task 12

For Maia's birthday party her family ordered small bottles of mixed soft drinks. Each bottle contained 635 ml of drink.

They bought 60 bottles but only 47 bottles were used.

How much in litres and millilitres was used?

How much in litres and millilitres was left?