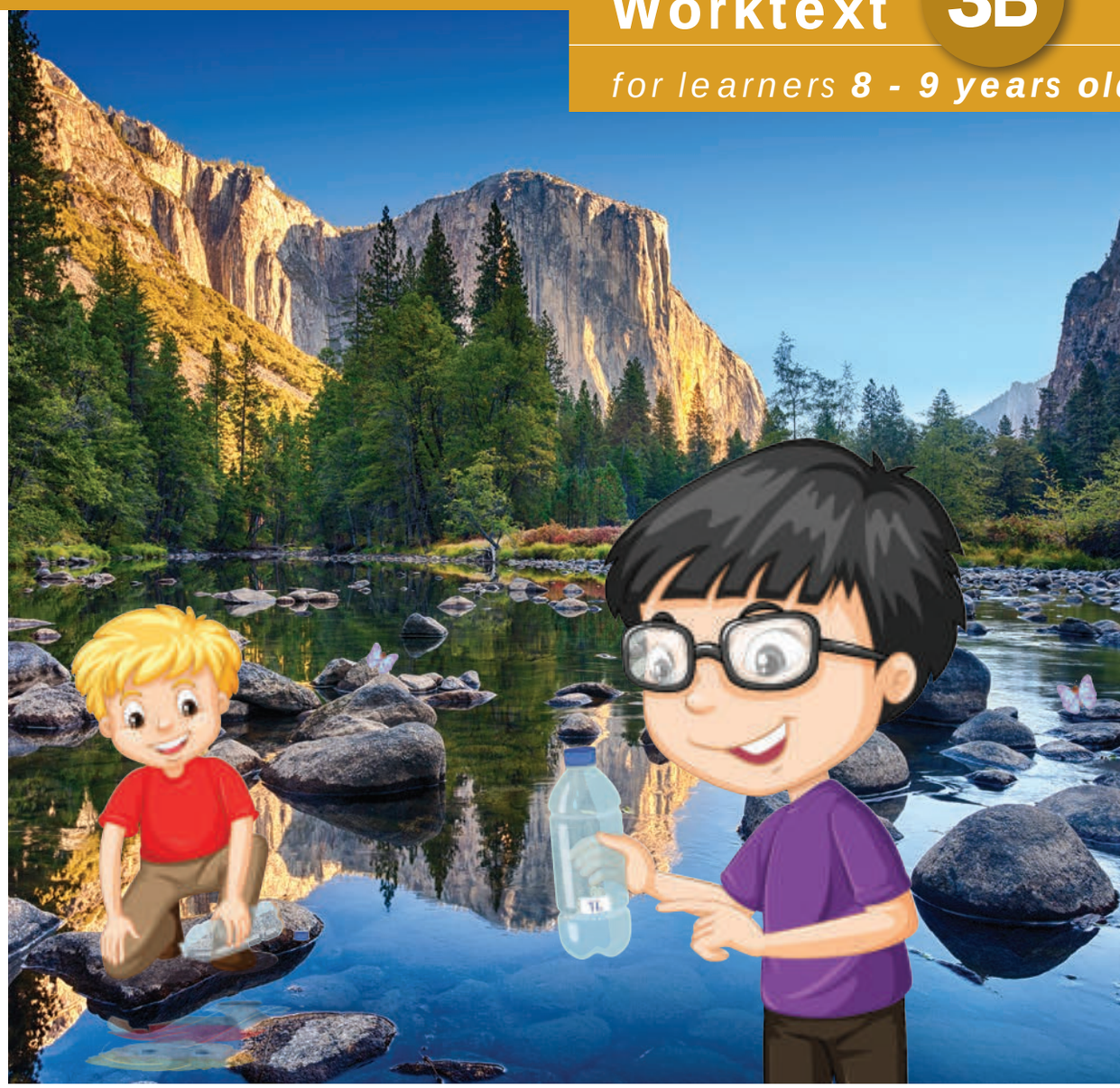
Let's Do MATHEMATICS

Worktext 3B

for learners ***8 - 9 years old***



Let's Do Mathematics

Let's Do Mathematics is a series covering levels K-6 and is fully aligned to the United States Common Core State Standards (USCCSS). Each level consists of two books (Book A and Book B) and combines textbook-style presentation of concepts as well as workbook practice.

Central to the USCCSS is the promotion of problem-solving skills and reasoning. Let's Do Mathematics achieves this by teaching and presenting concepts through a problem-solving based pedagogy and using the concrete-pictorial-abstract (CPA) approach. Learners acquire knowledge and understanding of concepts through a guided progression beginning with concrete examples and experiences which then flow into pictorial representations and finally mastery at the abstract and symbolic level. This approach ensures that learners develop a fundamental understanding of concepts rather than answering questions by learned procedures and algorithms.

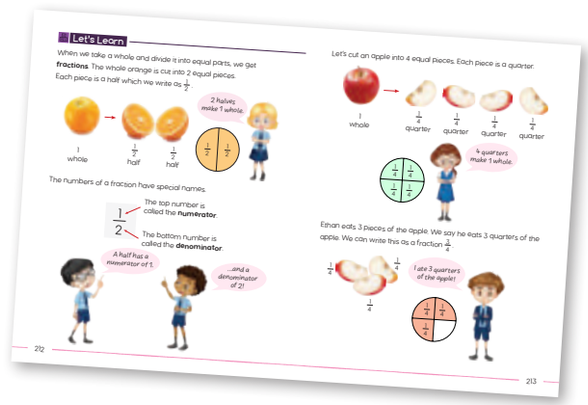
Key features of the series include:

Anchor Task

Open-ended activities serve as the starting point for understanding new concepts. Learners engage in activities and discussions to form concrete experiences before the concept is formalized.

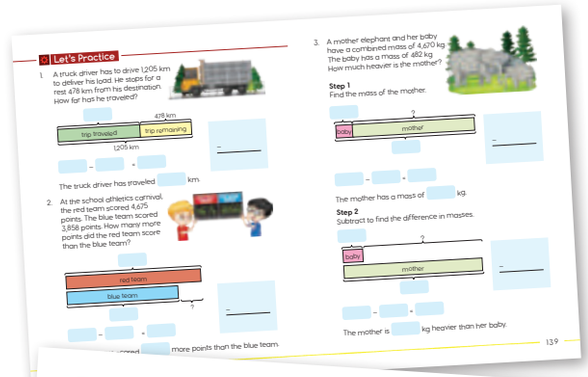
Let's Learn

Concepts are presented in a clear and colorful manner. Worked problems provide learners with guided step-by-step progression through examples. Series mascots provide guidance through helpful comments and observations when new concepts are introduced.



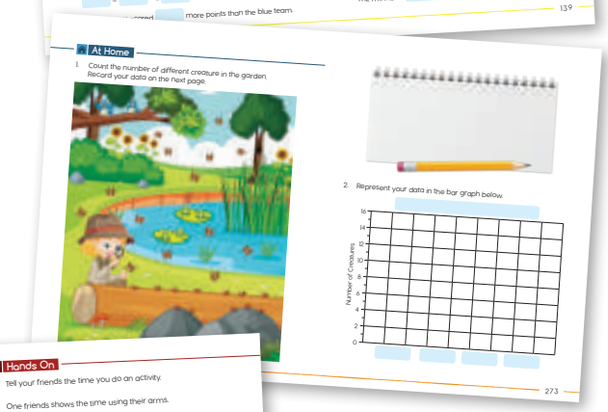
Let's Practice

Learners demonstrate their understanding of concepts through a range of exercises and problems to be completed in a classroom environment. Questions provide a varying degree of guidance and scaffolding as learners progress to mastery of the concepts.



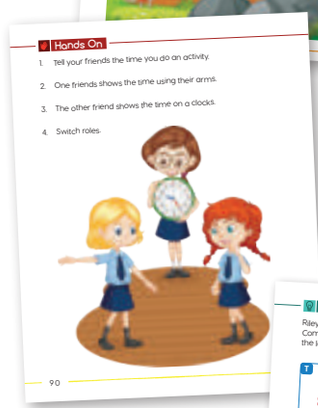
At Home

Further practice designed to be completed without the guidance of a teacher. Exercises and problems in this section follow on from those completed under Let's Practice.



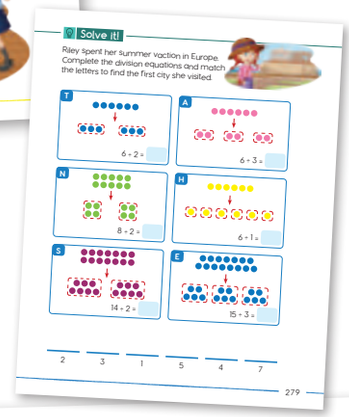
Hands On

Learners are encouraged to 'learn by doing' through the use of group activities and the use of mathematical manipulatives.



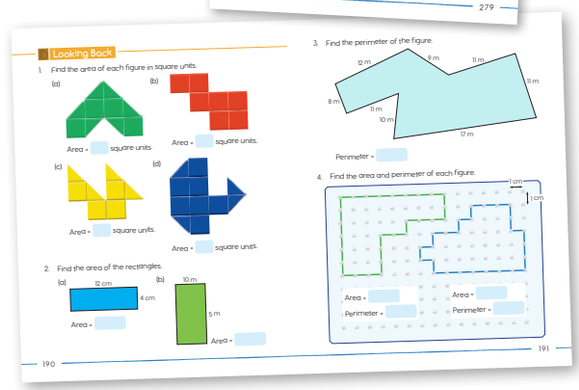
Solve It!

Activities that require learners to apply logical reasoning and problem-solving. Problems are often posed which do not have a routine strategy for solving them. Learners are encouraged to think creatively and apply a range of problem-solving heuristics.



Looking Back

Consolidated practice where learners demonstrate their understanding on a range of concepts taught within a unit.



Contents

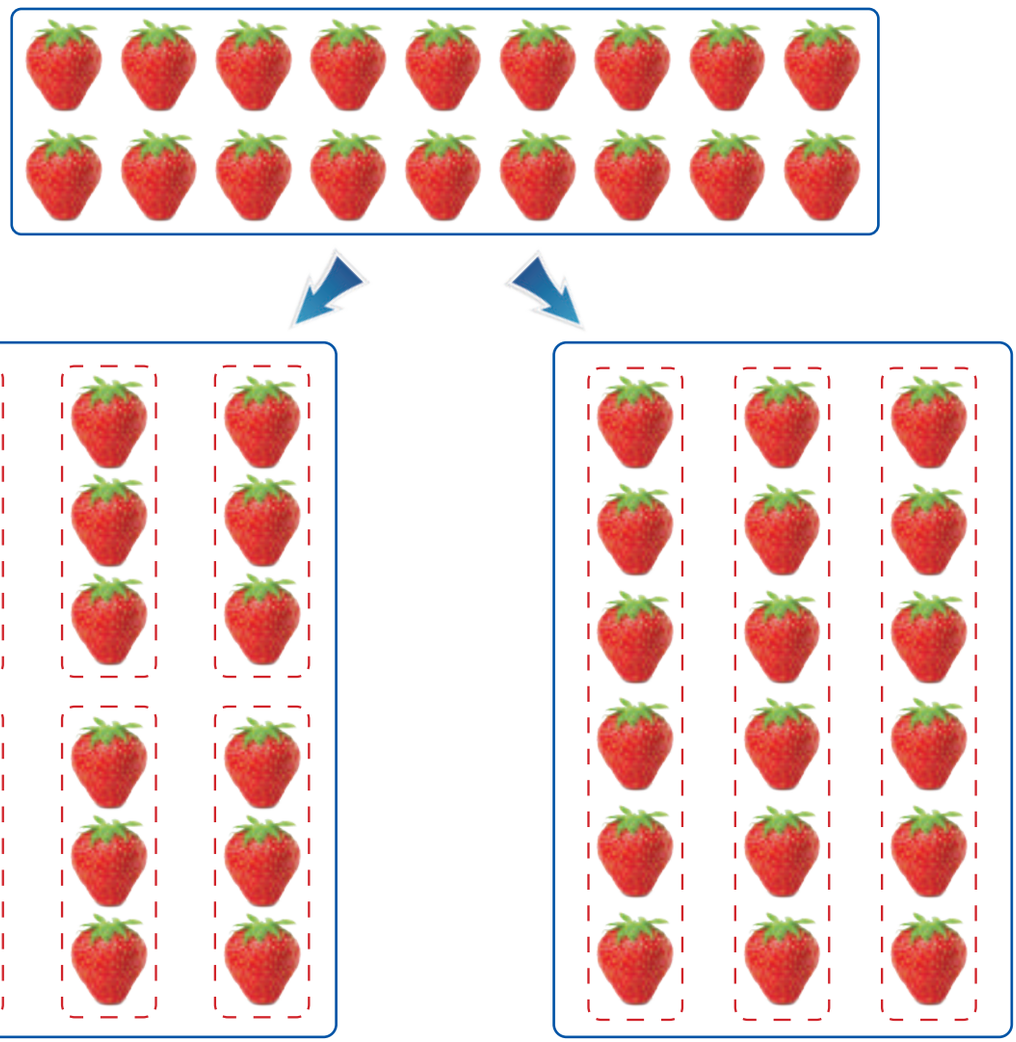
6 Division (2)

Anchor Task

Dividing by 6

Let's Learn

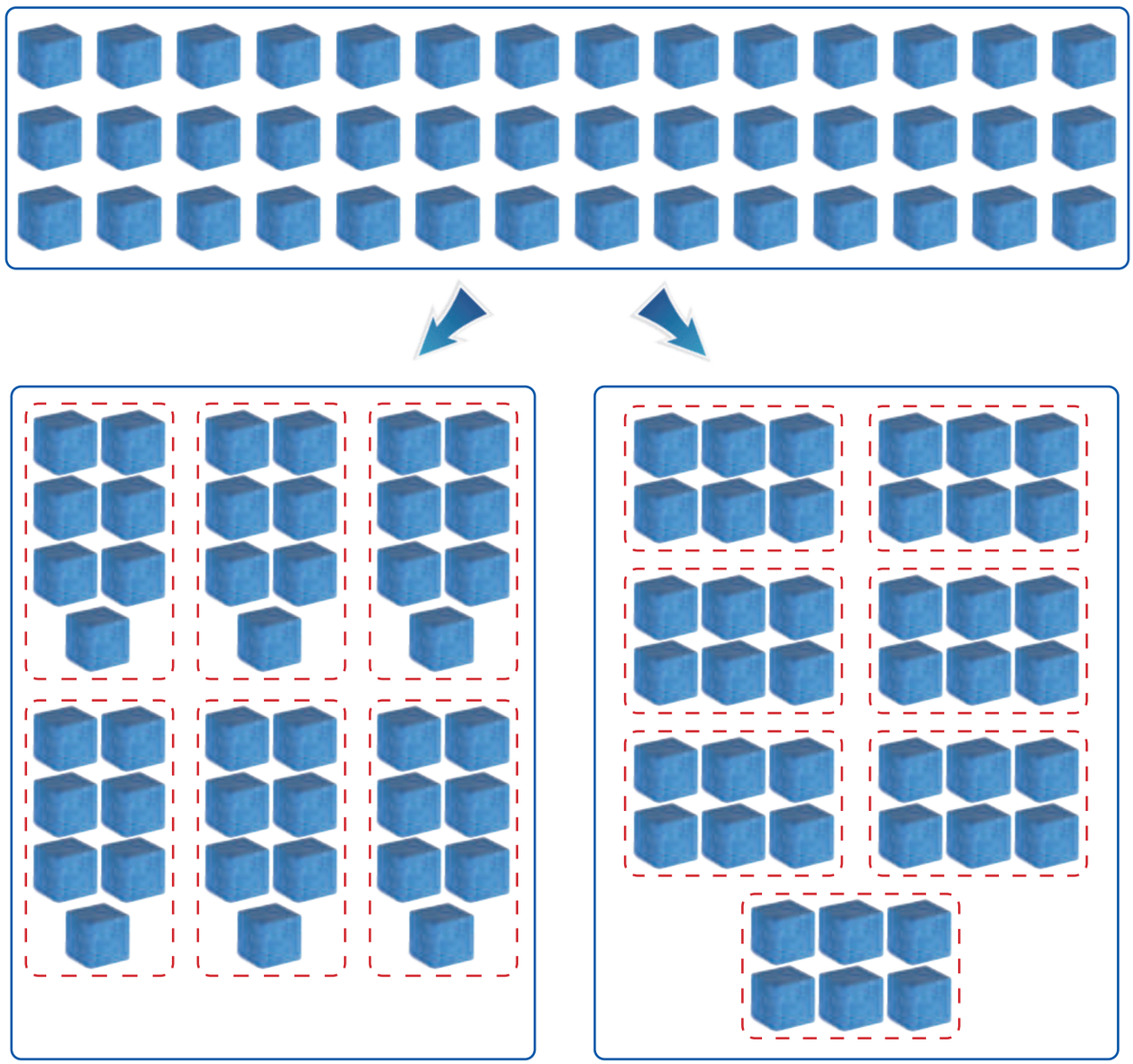
There are 18 strawberries. The strawberries are divided into equal groups. How many strawberries are in each group? How many groups of strawberries are there?



18 ÷ 6 = 3
There are 6 groups of strawberries. There are 3 strawberries in each group.

18 ÷ 3 = 6
There are 3 groups of strawberries. There are 6 strawberries in each group.

There are 42 blocks. The blocks are divided into equal groups. How many blocks are in each group? How many groups of blocks are there?



42 ÷ 6 = 7
There are 6 groups of blocks.
There are 7 blocks in each group.

42 ÷ 7 = 6
There are 7 groups of blocks.
There are 6 blocks in each group.

Let's Practice

1. The balloons are grouped in 6s. Fill in the blanks.

(a) There are ____ groups of ____ balloons.

(b) Complete the division equation.

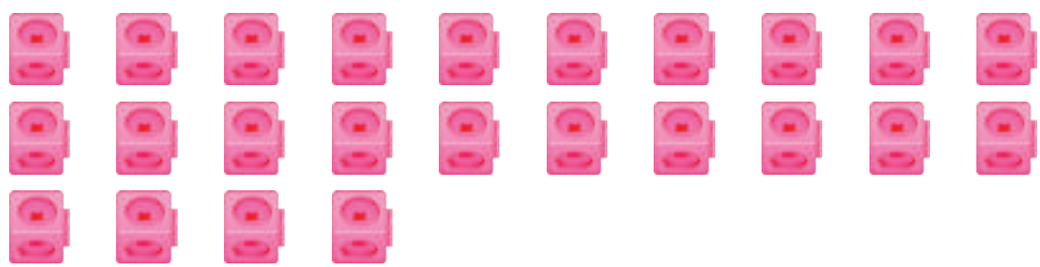
____ ÷ ____ = ____

2. Circle groups of 6 cubes and complete the division equation.

(a)

____ ÷ 6 = ____

(b)



____ ÷ 6 = ____

10 Area and Perimeter

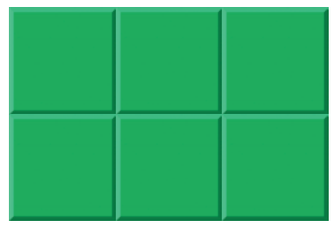
Anchor Task

Introduction to Area

Let's Learn

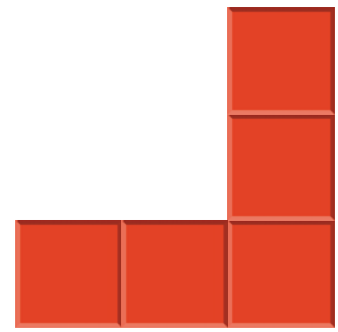
Michelle uses square tiles to make some figures. She counts the number of tiles used to make each shape.

Count the squares used to make each figure!



6 square tiles

3 square tiles



5 square tiles

The amount of surface covered by a shape is called **area**.
We say:
The green figure has an area of 6 square tiles.
The yellow figure has an area of 3 square tiles.
The red figure has an area of 5 square tiles.

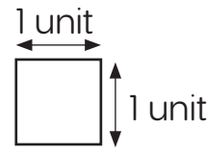
Riley uses some yellow and blue tiles to make a figure.

Each blue tile has half the area of a yellow square tile

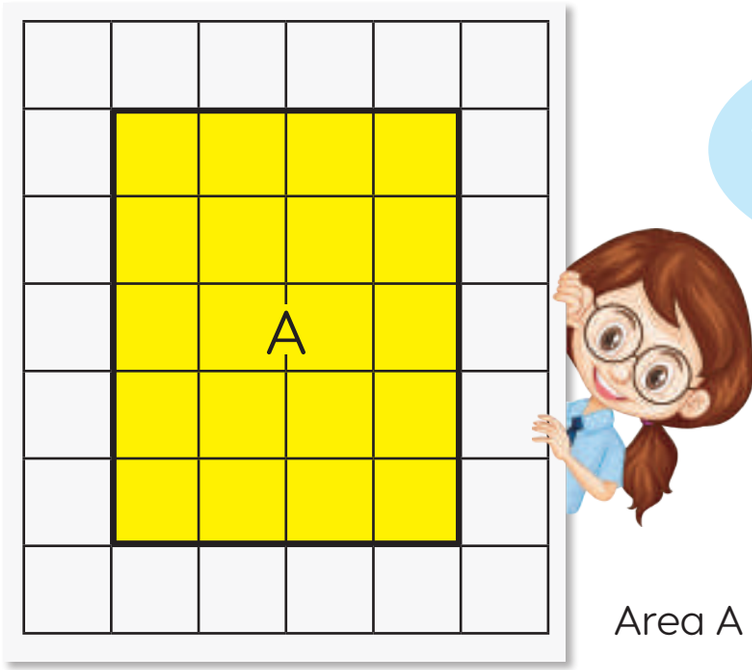
Can you find the area of her figure?

2 blue tiles can combine to make 1 square tile.
Riley's figure has an area of 4 square tiles.

The square grids below are made of squares that have a side length of 1 unit.



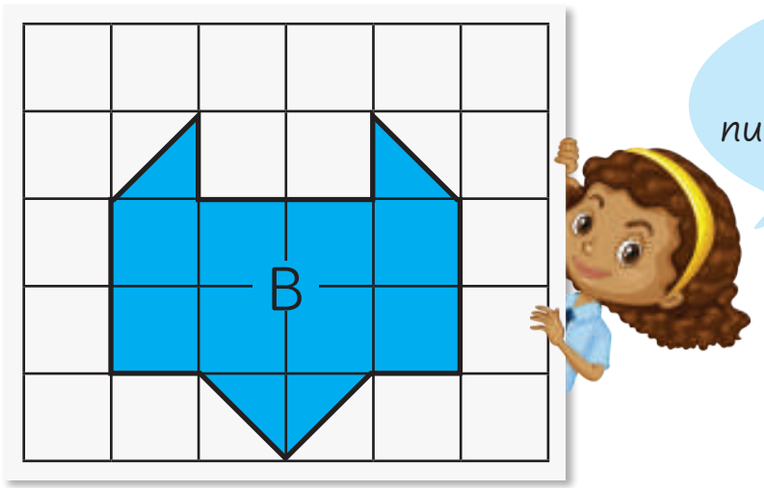
Halle draws and shades a figure on a sheet of square grid paper.
What is the area of the shaded figure?



To find the area of the shaded figure, count the number of square units it fills up.

Area A = 20 square units.

Keira draws and shades a figure on a sheet of square grid paper.
What is the area of the shaded figure?

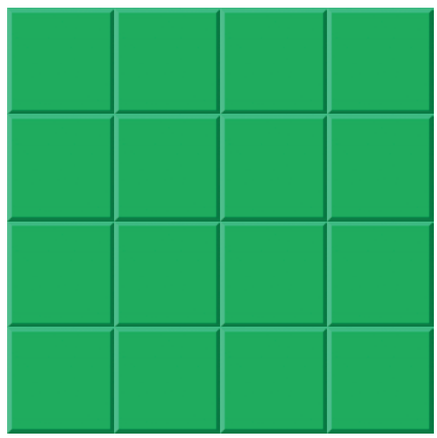


To find the area of the shaded figure, add the number of square units and half square units.

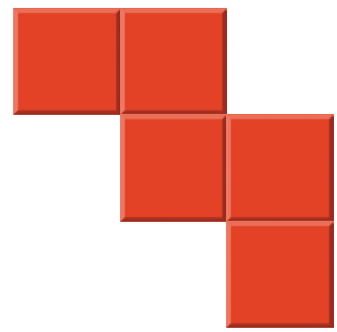
Area B = 8 square units + 4 half square units.
= 10 square units.

Let's Practice

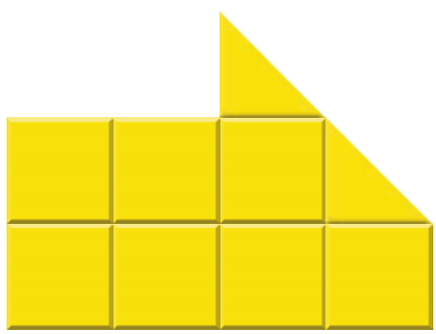
1. Find the area of each figure.



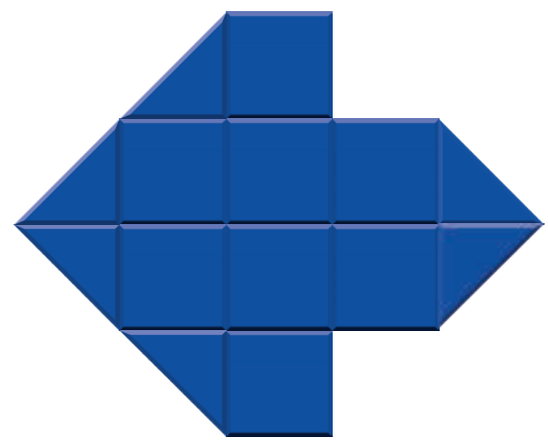
Area = ____ square units.



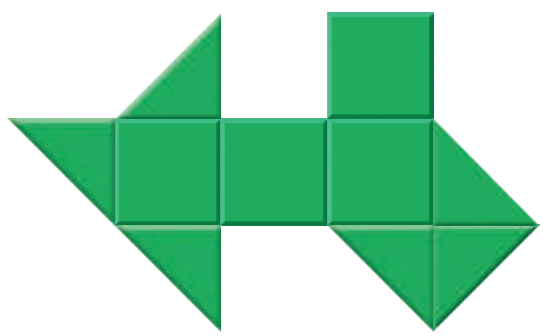
Area = ____ square units.



Area = ____ square units.

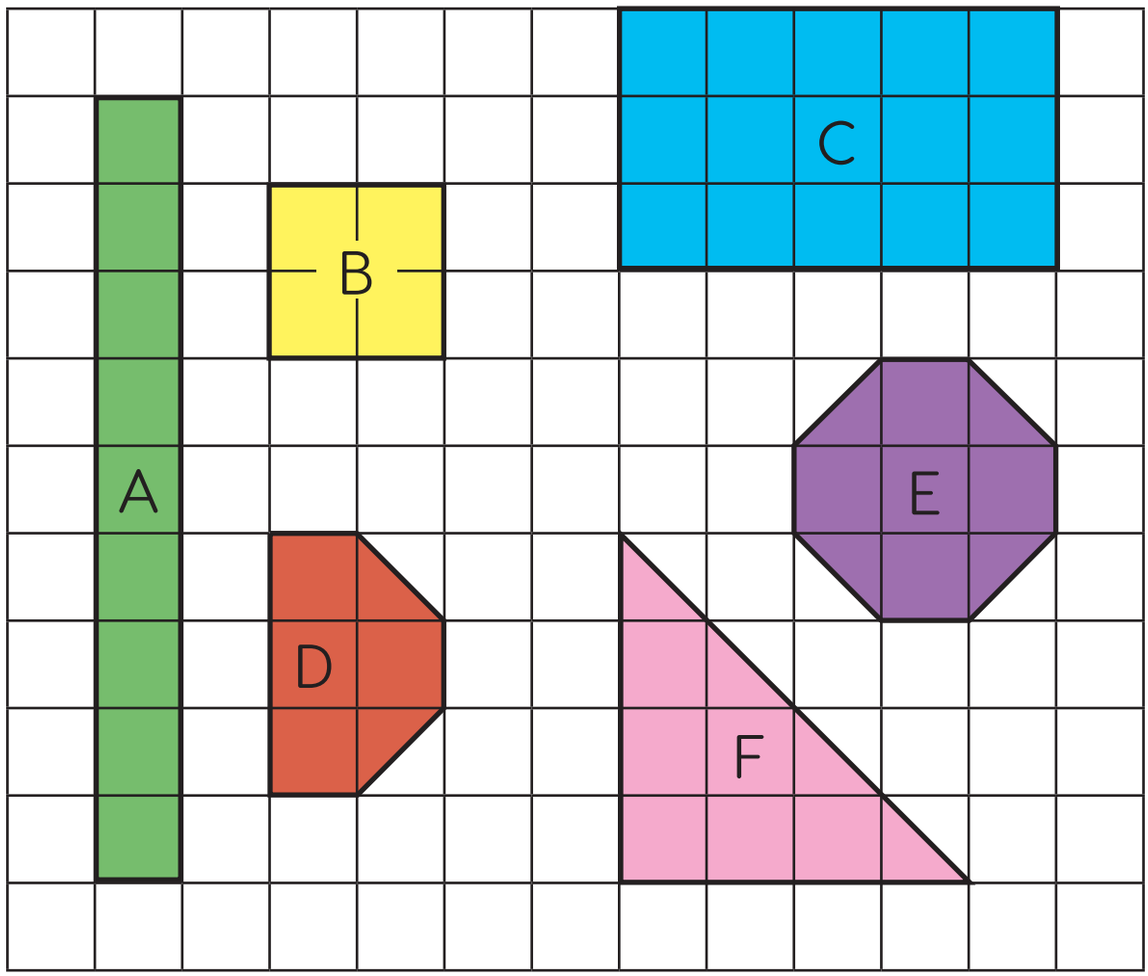


Area = ____ square units.



Area = ____ square units.

2. The figures are inside a grid made up of square tiles.



(a) Find the area of each figure.

Area A = _____ square units. Area B = _____ square units.

Area C = _____ square units. Area D = _____ square units.

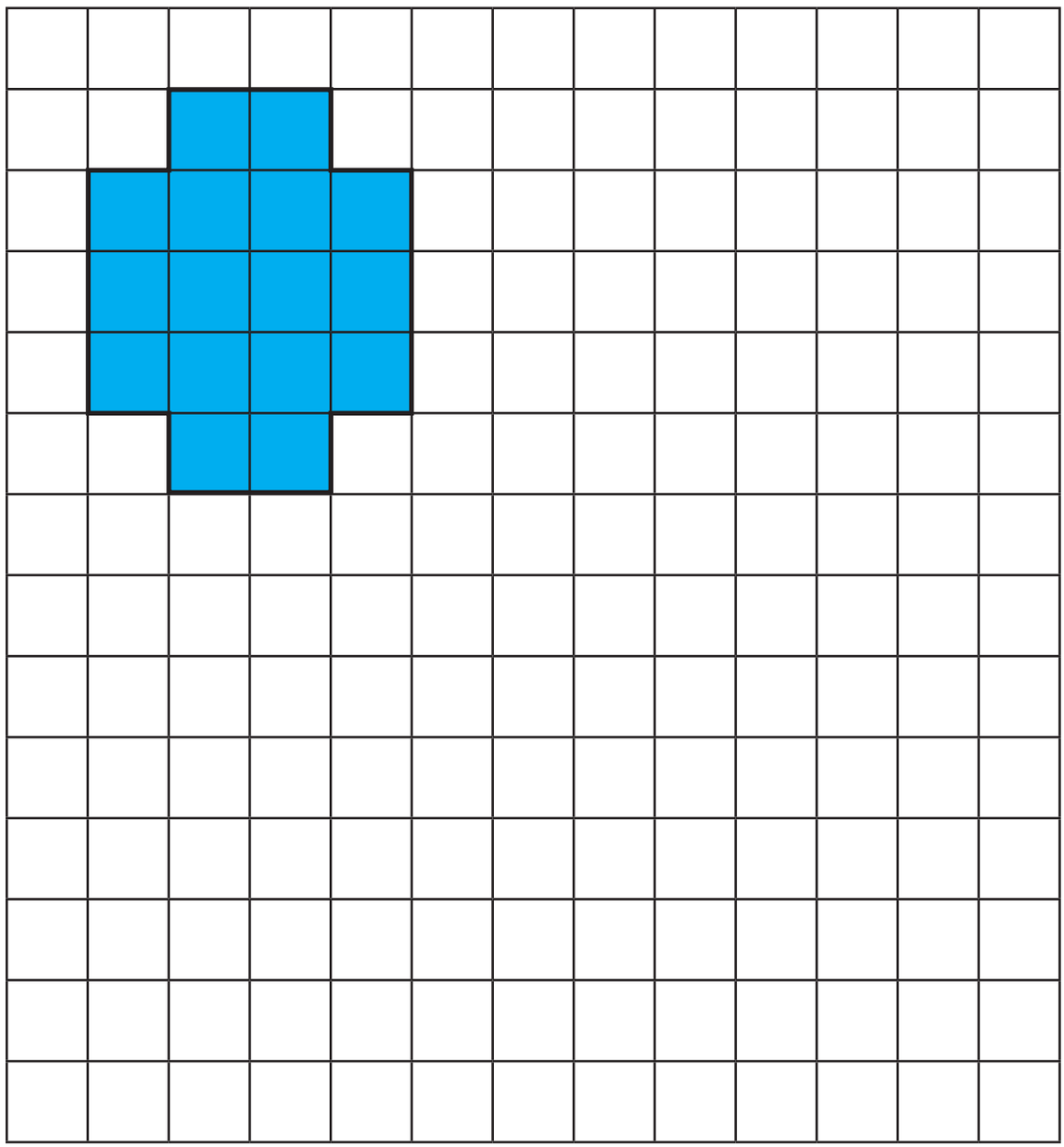
Area E = _____ square units. Area F = _____ square units.

(b) Which figure has the greatest area? _____

(c) Which figure has the smallest area? _____

Solve It!

The blue figure has an area of 16 square units.
Color 3 more figures that have a different shape but the same area.



Make sure the figures do not overlap or share any squares.

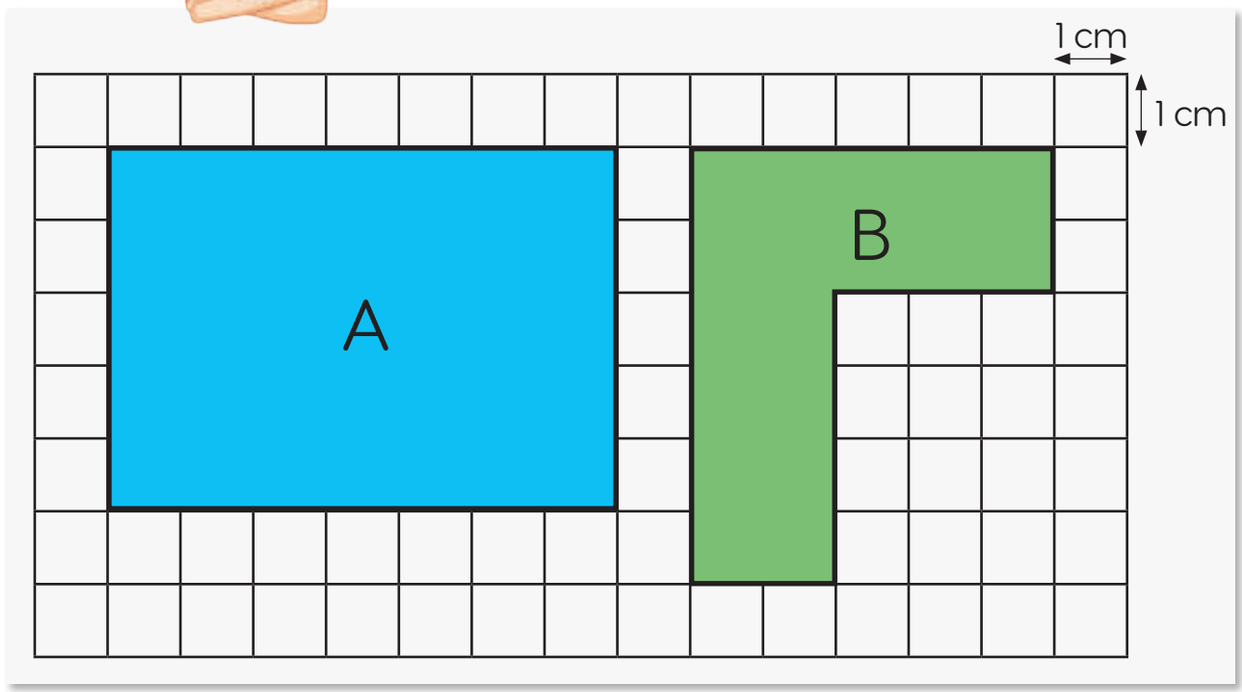
Introduction to Perimeter

Anchor Task

Let's Learn

Dominic draws two figures on a sheet of 1-cm square grid paper.
He adds the lengths of each side of the figures.

The total distance around a figure is called the perimeter.

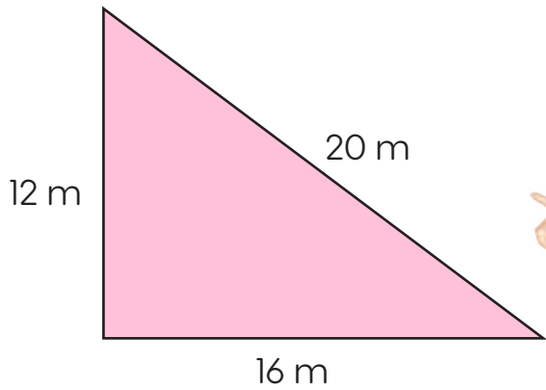


The distance of a continuous line around a figure is the **perimeter**.

Perimeter A = 7 cm + 5 cm + 7 cm + 5 cm
= 24 cm

Perimeter B = 5 cm + 2 cm + 3 cm + 4 cm + 2 cm + 6 cm
= 22 cm

Find the perimeter of the triangle.



To find the perimeter of the triangle, add the lengths of the sides.

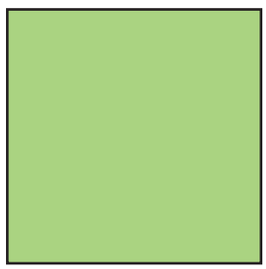
Perimeter = 20 m + 16 m + 12 m
= 48 m

Find the perimeter of the rectangle.

The perimeter of the rectangle is its length + breadth + length + breadth.

Perimeter = 40 m + 11 m + 40 m + 11 m
= 102 m

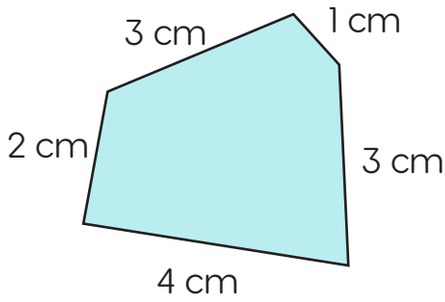
Find the perimeter of the square.



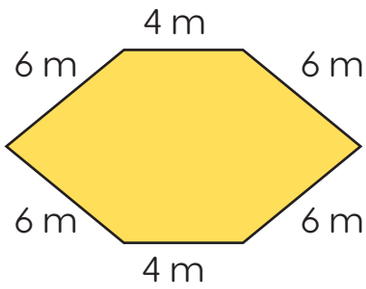
The perimeter of the square is equal to 4 times its length.

Perimeter = 8 cm + 8 cm + 8 cm + 8 cm
= 4 x 8 cm
= 32 cm

Find the perimeter of each figure.

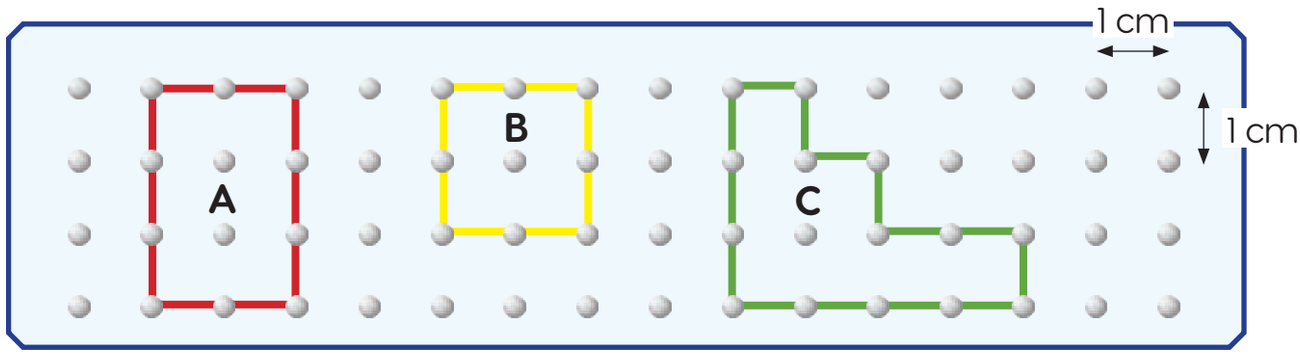


2 cm + 3 cm + 1 cm + 3 cm + 4 cm = 13 cm
The figure has a perimeter of 13 cm.



4 m + 6 m + 6 m + 4 m + 6 m + 6 m = 32 m
The figure has a perimeter of 32 m.

Find the perimeter of each figure formed with an elastic band on the geoboard.



Perimeter A = 2 cm + 3 cm + 2 cm + 3 cm
= 10 cm

Perimeter B = 4 x 2 cm
= 8 cm

Perimeter C = 1 cm + 1 cm + 1 cm + 1 cm + 2 cm + 1 cm + 4cm + 3 cm
= 14 cm

Let's Practice

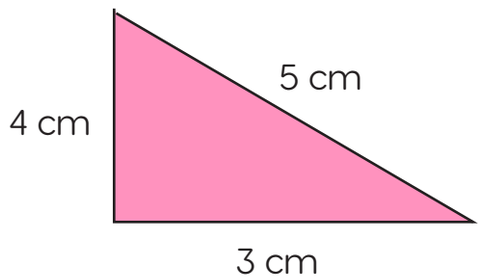
1. Find the perimeter of each figure. Show your working.

(a)

Perimeter =

Working

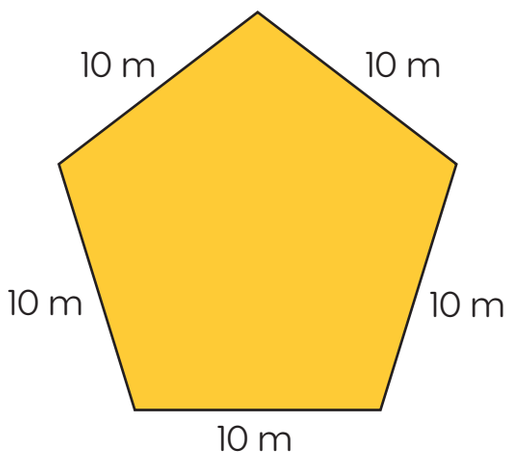
(b)



Perimeter =

Working

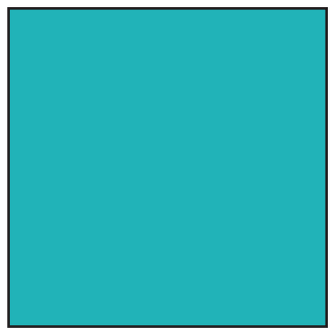
(c)



Perimeter =

Working

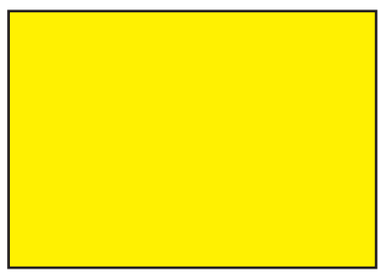
(d)



Working

Perimeter =

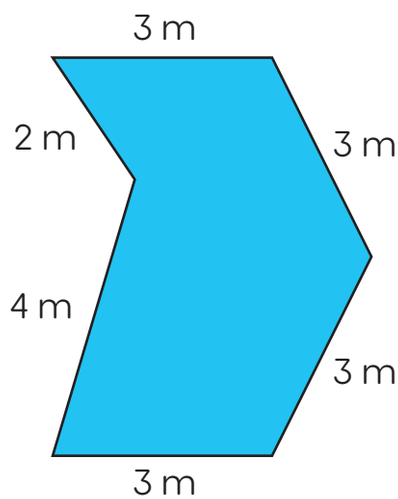
(e)



Working

Perimeter =

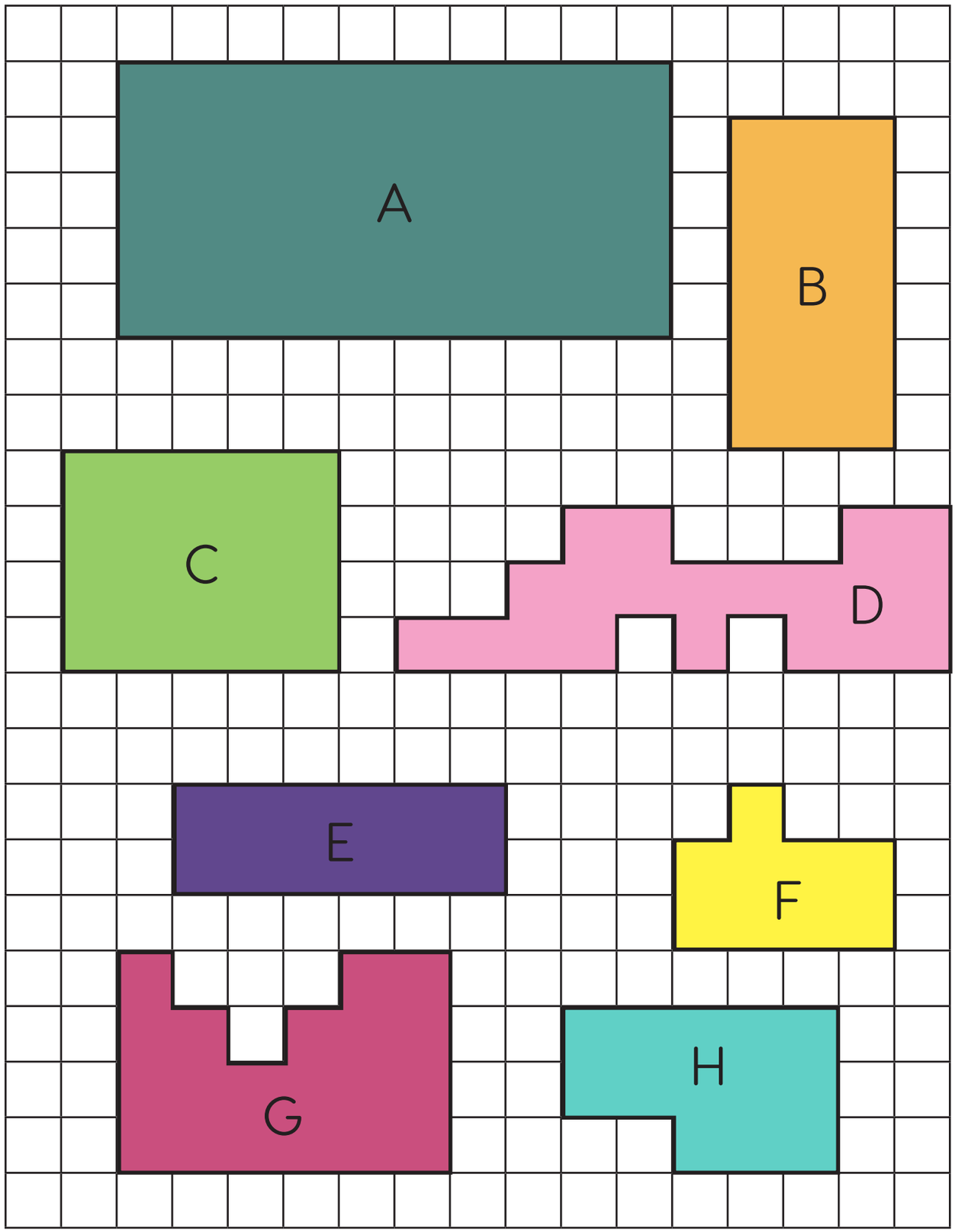
(f)



Working

Perimeter =

2. The figures below are inside 1-cm square grid paper.



(a) Find the perimeter of each figure.

Perimeter A =

Perimeter B =

Perimeter C =

Perimeter D =

Perimeter E =

Perimeter F =

Perimeter G =

Perimeter H =

Working

(b) Which figure has the greatest perimeter?

(c) Which figure has the smallest perimeter?

(d) Which 2 figures have the same perimeter?

Figures and have the same perimeter.

(e) Which figure has the greatest number of sides?

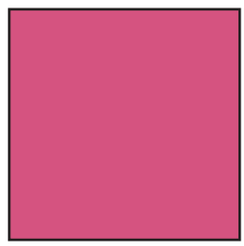
Solve It!

Ethan has a piece of wire that is 16 cm long.
He wants to bend the wire to make a rectangle.
Draw 4 different rectangles he can make that use the full length of the wire in the grid below.

At Home

1. Find the perimeter of each figure. Show your working.

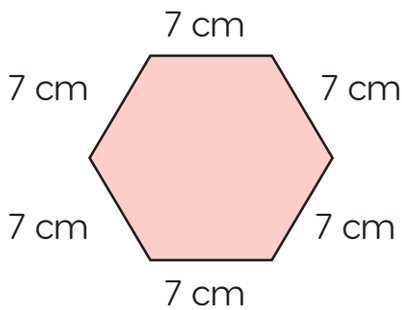
(a)



Perimeter = _____

Working

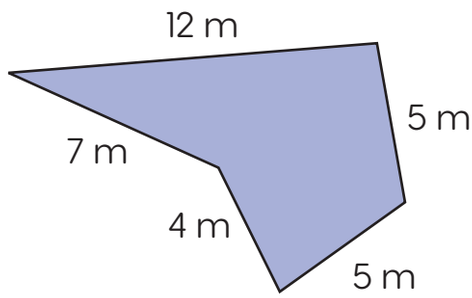
(b)



Perimeter = _____

Working

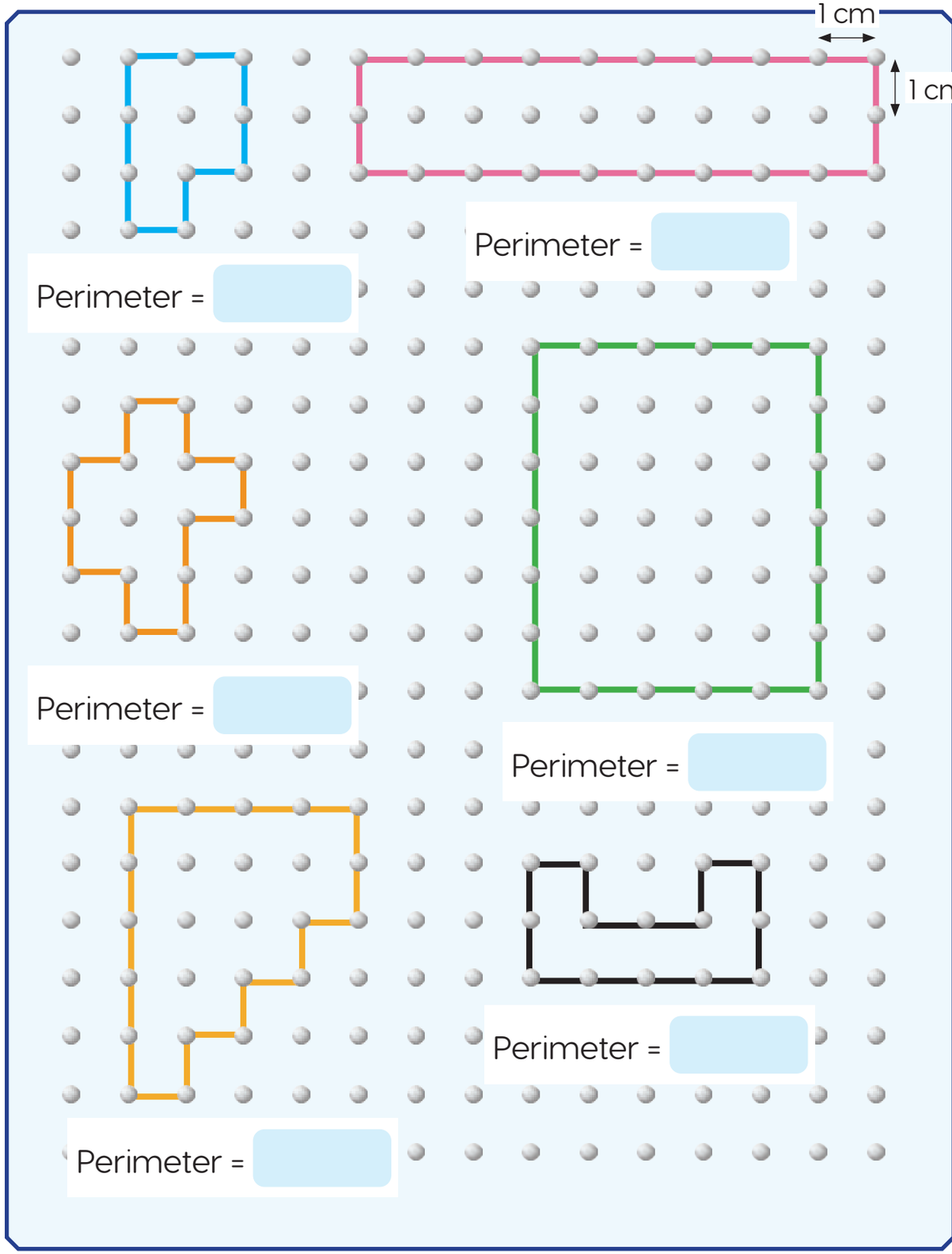
(c)



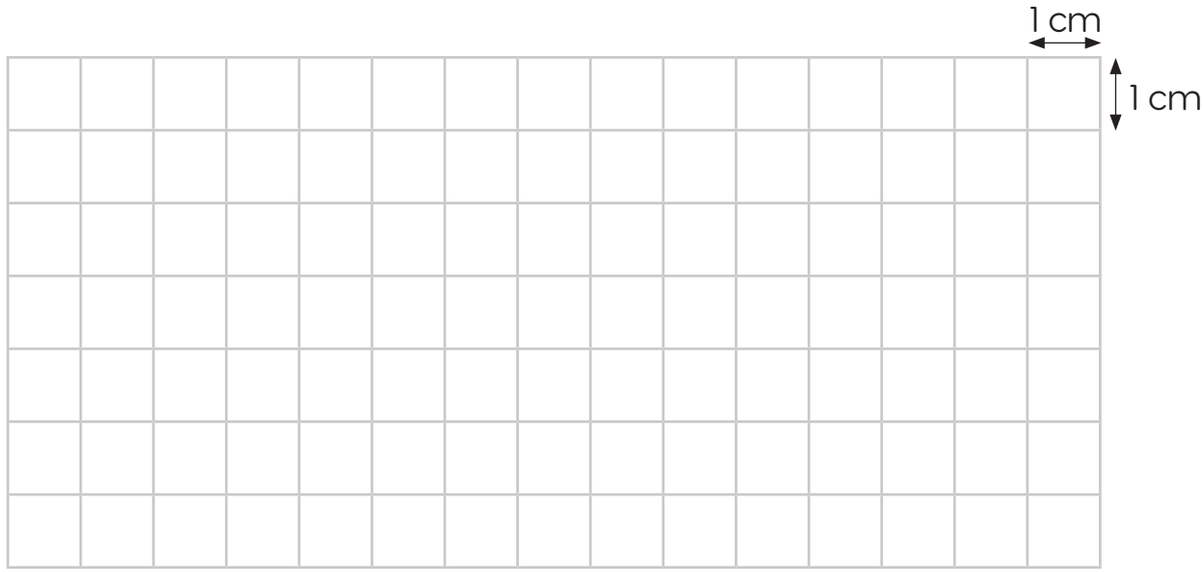
Perimeter = _____

Working

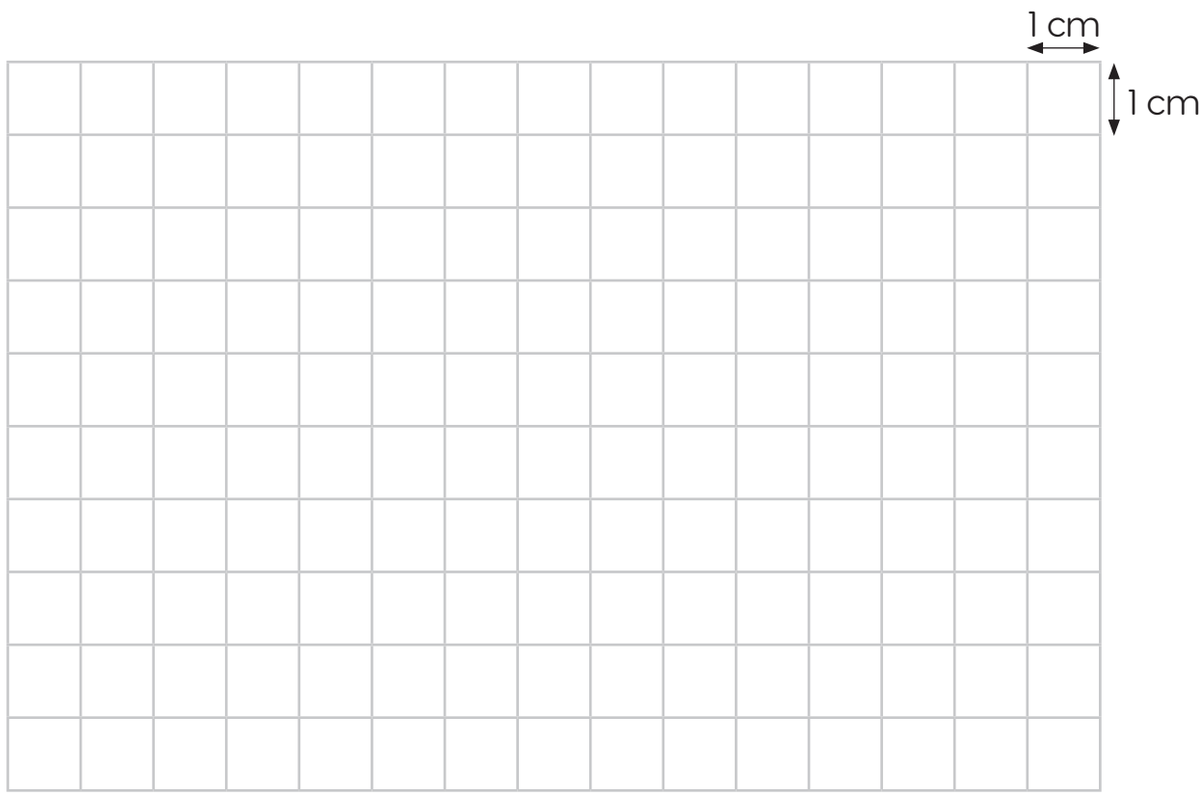
2. Find the perimeter of each figure on the geoboard.



3. Draw 2 different rectangles with a perimeter of 14 cm.



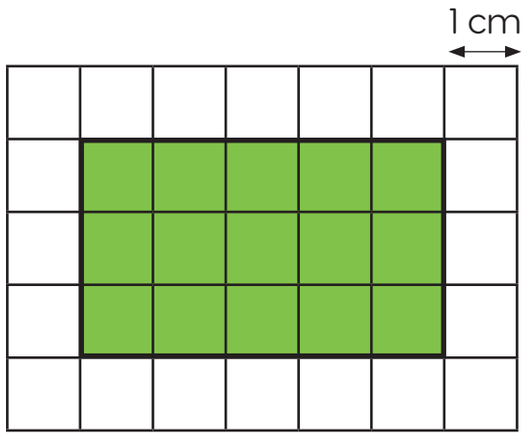
4. Draw a figure with 6 sides that has a perimeter of 28 cm.



Area and Perimeter

Let's Learn

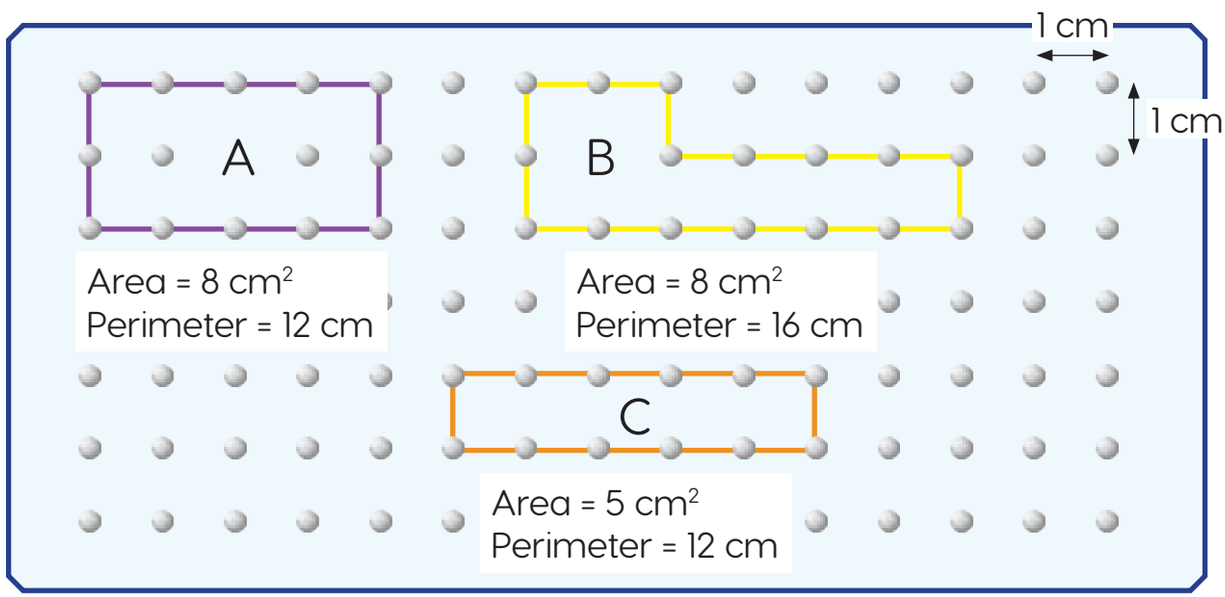
Find the area and perimeter of the rectangle.



Area = 5 cm x 3 cm
= 15 cm^2

Perimeter = 5 cm + 3 cm + 5 cm + 3cm
= 16 cm

Compare the areas and perimeters of the figures in the geoboard.

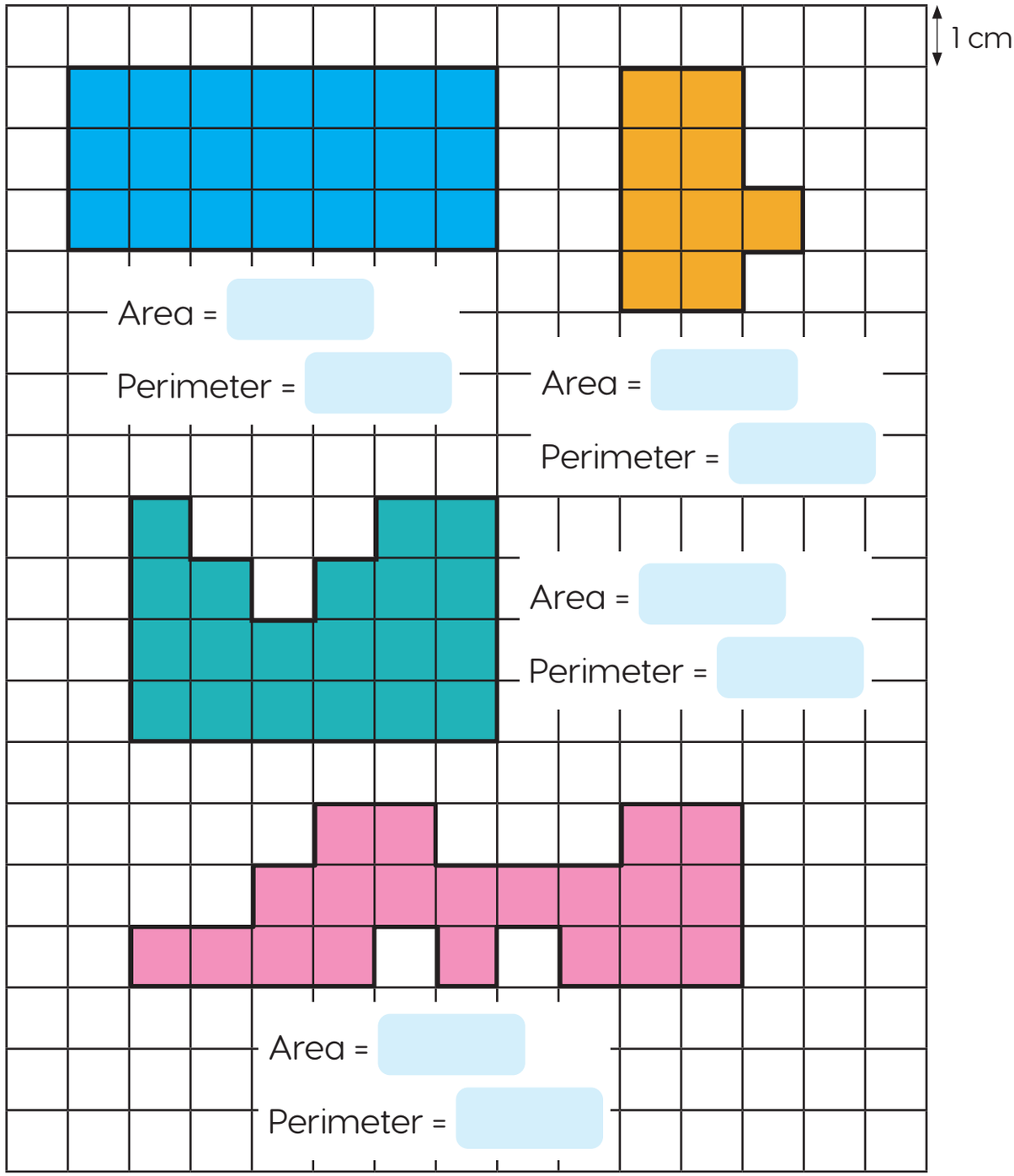


Figures A and B have the same area but different perimeters!

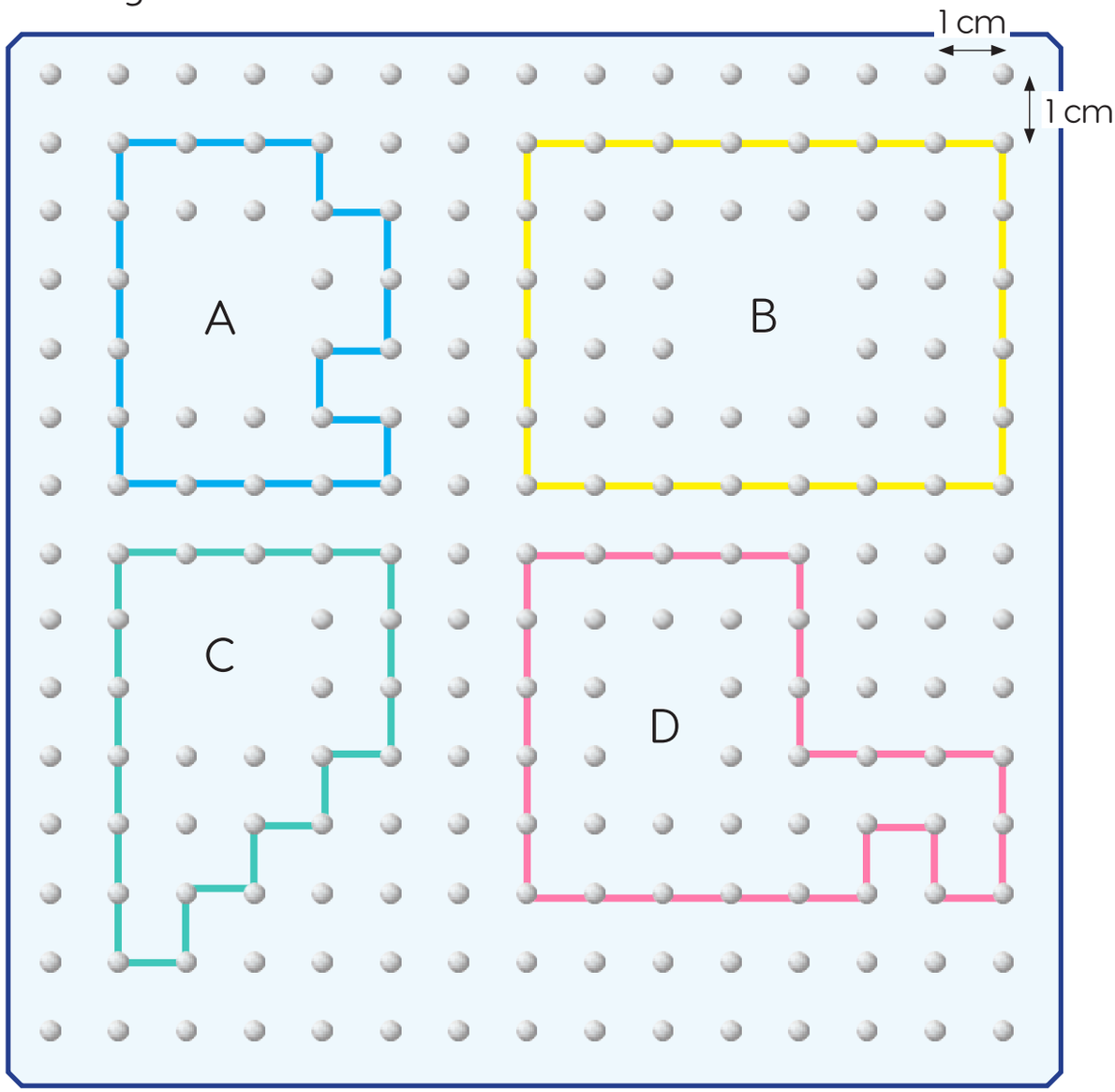
Figures A and C have the same perimeter but different areas!

Let's Practice

1. Find the perimeter and area of each figure.



2. Compare the areas and perimeters of the figures in the geoboard.



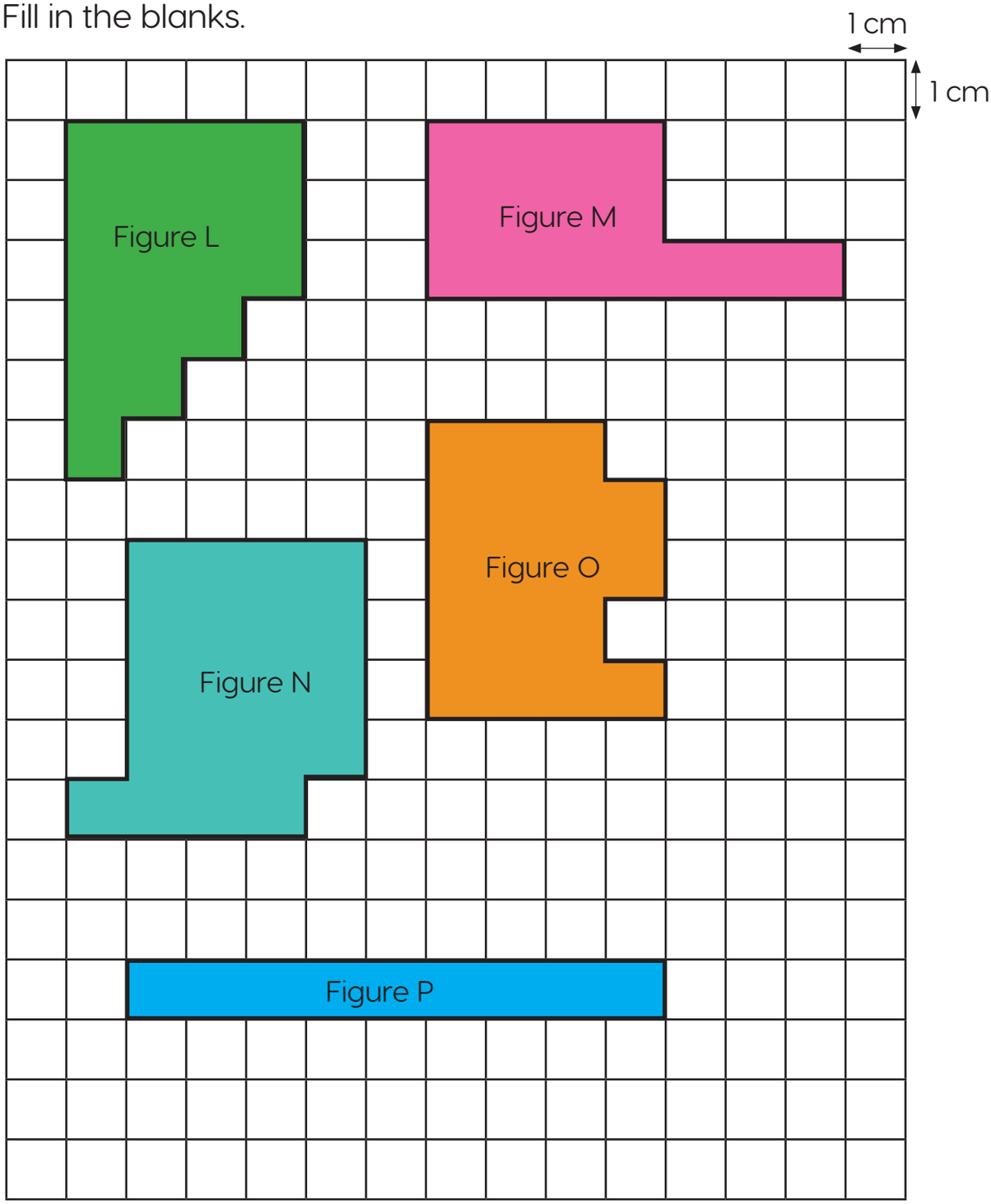
(a) Find 2 figures that have the same area.

Figures _____ and _____ both have an area of _____ cm^2.

(b) Find 2 figures that have the same perimeter.

Figures _____ and _____ both have a perimeter of _____ cm.

3. Fill in the blanks.

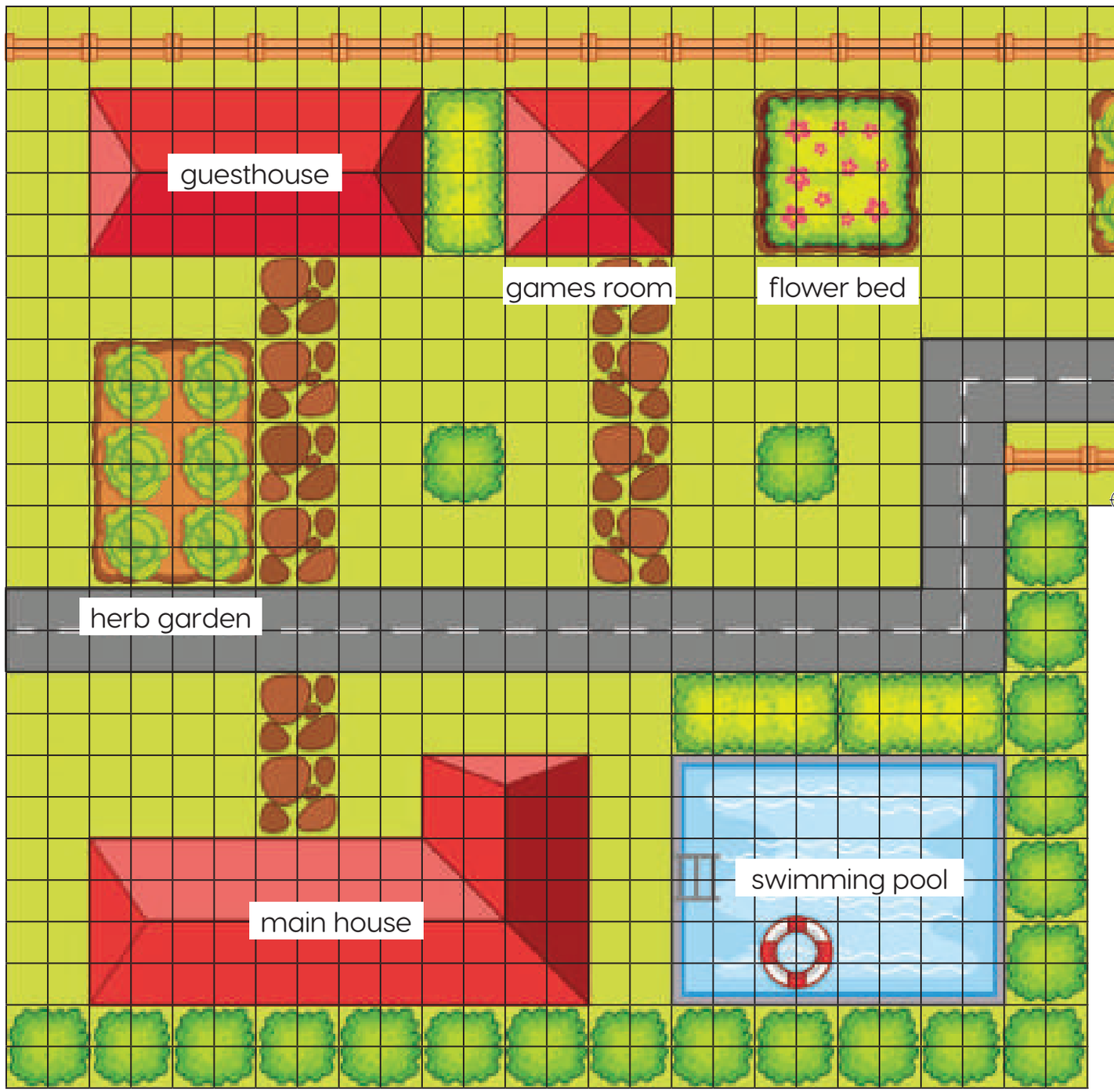


(a) Each figure has a perimeter of _____ cm.

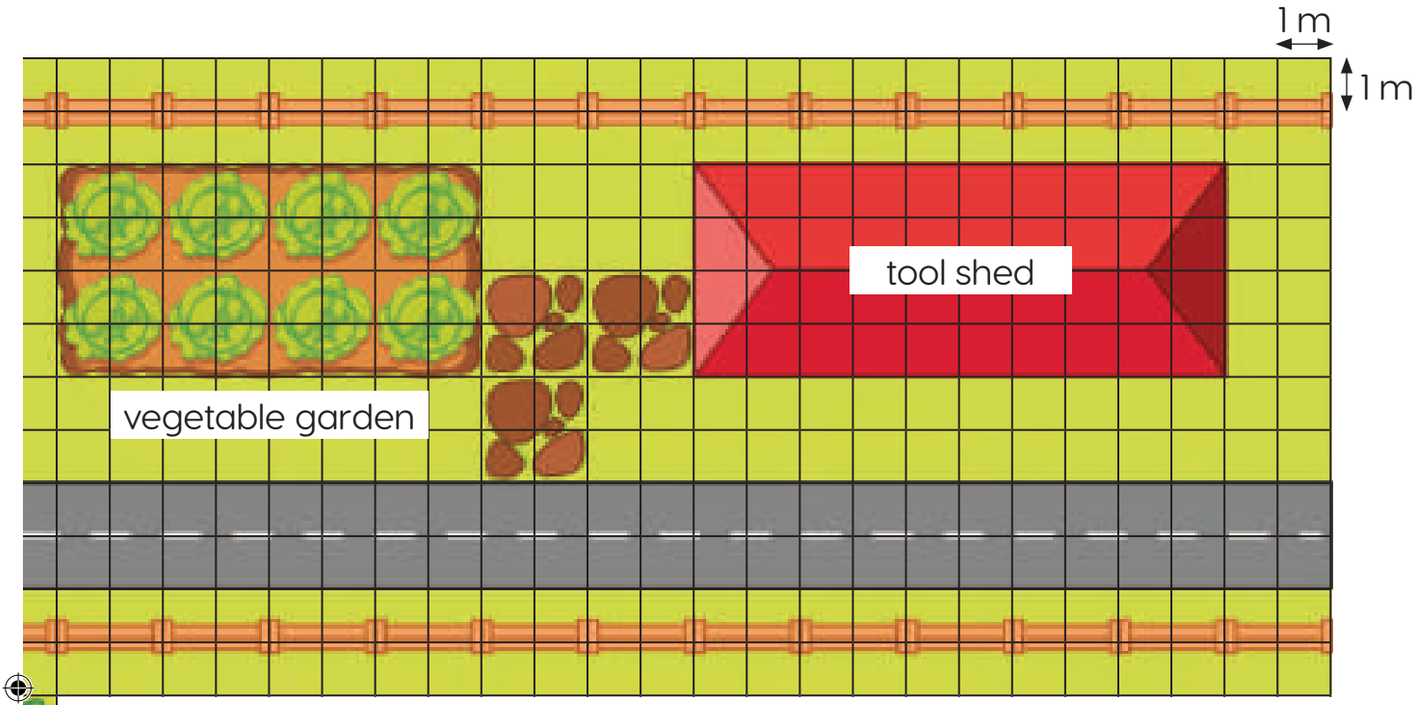
(b) Figures _____ and _____ have the same area of _____ cm^2.

Solve It!

Michelle spent her vacation at her grandfather's ranch.
The map shows some of the features of the ranch.



Use your notebook to answer the questions below.



(a) Find the area of the swimming pool.

(b) Find the perimeter of the guesthouse.

(c) What is the combined area of the guesthouse and games room?

(d) What is the area of the main house?

(e) Michelle's grandfather wants to build a fence around the vegetable garden, the flower bed and the herb garden to keep the animals out.

How many meters of fencing will he need?

At Home

1. Find the perimeter and area of each figure.