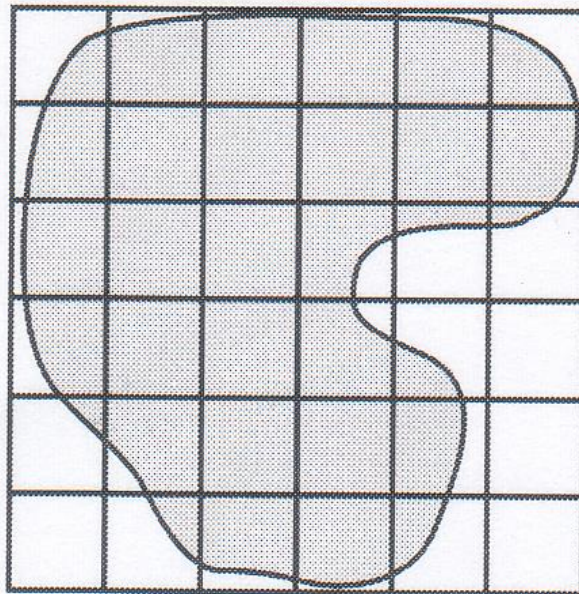


Perimeter and Area



Name: _____

- Rating
- A All pages complete and correct.
 - B Pages 1 to 10 complete and correct.
 - C Core Exercises* complete and correct
 - D Most Core Exercises complete and correct.
 - E Three or fewer pages complete and correct.

The rating I wish to earn is _____

Length Review

Metric Units of Length

The metre (m) is the standard unit of length.

- 1 kilometre (km) = 1000 metres
- 1 metre (m) = 100 centimetres (cm)
- 1 metre (m) = 1000 millimetres (mm)
- 1 centimetre (cm) = 10 millimetres (mm)

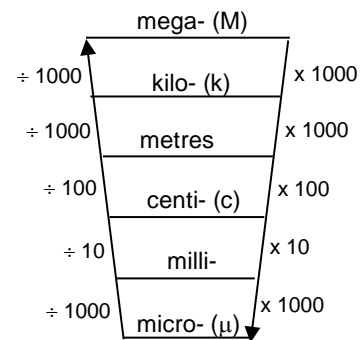
And for very, very small lengths:

A micrometre (μm) is one-millionth of a metre, so

- 1 millimetre = 1000 micrometres (μm)
- 1 metre = 1 000 000 micrometres (μm)

Note: The symbol for micro is the Greek letter ' μ '. It is spelled 'mu' and pronounced 'mew'.

Metric Conversions Ladder



Example

Convert: a. 4200 metres to kilometres b. 2.56 m to cm

Solution a. $4200 \div 1000 = 4.2 \text{ km}$ b. $2.56 \times 100 = 256 \text{ cm}$

Core

1. Convert

- a. $2 \text{ m} = \underline{\hspace{2cm}} \text{ cm}$ b. $600 \text{ cm} = \underline{\hspace{2cm}} \text{ m}$ c. $4.6 \text{ m} = \underline{\hspace{2cm}} \text{ cm}$
- d. $270 \text{ cm} = \underline{\hspace{2cm}} \text{ m}$ e. $3.91 \text{ m} = \underline{\hspace{2cm}} \text{ cm}$ f. $5.916 \text{ m} = \underline{\hspace{2cm}} \text{ cm}$

2. Convert

- a. $3 \text{ m} = \underline{\hspace{2cm}} \text{ mm}$ b. $9000 \text{ mm} = \underline{\hspace{2cm}} \text{ m}$ c. $2.7 \text{ m} = \underline{\hspace{2cm}} \text{ mm}$
- d. $3.78 \text{ m} = \underline{\hspace{2cm}} \text{ mm}$ e. $4589 \text{ mm} = \underline{\hspace{2cm}} \text{ m}$ f. $0.045 \text{ m} = \underline{\hspace{2cm}} \text{ mm}$

3. Convert

- a. $3 \text{ cm} = \underline{\hspace{2cm}} \text{ mm}$ b. $50 \text{ mm} = \underline{\hspace{2cm}} \text{ cm}$ c. $3.7 \text{ cm} = \underline{\hspace{2cm}} \text{ mm}$
- d. $53 \text{ mm} = \underline{\hspace{2cm}} \text{ cm}$ e. $5.78 \text{ cm} = \underline{\hspace{2cm}} \text{ mm}$ f. $3.6 \text{ mm} = \underline{\hspace{2cm}} \text{ cm}$

4. Convert:

- a. $2 \text{ m} = \underline{\hspace{2cm}} \text{ cm}$ b. $600 \text{ cm} = \underline{\hspace{2cm}} \text{ m}$ c. $4.6 \text{ m} = \underline{\hspace{2cm}} \text{ cm}$
- d. $270 \text{ cm} = \underline{\hspace{2cm}} \text{ m}$ e. $3.91 \text{ m} = \underline{\hspace{2cm}} \text{ cm}$ f. $5.916 \text{ m} = \underline{\hspace{2cm}} \text{ cm}$
- g. $3 \text{ m} = \underline{\hspace{2cm}} \text{ mm}$ h. $9000 \text{ mm} = \underline{\hspace{2cm}} \text{ m}$ i. $2.7 \text{ m} = \underline{\hspace{2cm}} \text{ mm}$
- j. $3.78 \text{ m} = \underline{\hspace{2cm}} \text{ mm}$ k. $4589 \text{ mm} = \underline{\hspace{2cm}} \text{ m}$ l. $0.045 \text{ m} = \underline{\hspace{2cm}} \text{ mm}$
- m. $3 \text{ cm} = \underline{\hspace{2cm}} \text{ mm}$ n. $50 \text{ mm} = \underline{\hspace{2cm}} \text{ cm}$ o. $3.7 \text{ cm} = \underline{\hspace{2cm}} \text{ mm}$
- p. $53 \text{ mm} = \underline{\hspace{2cm}} \text{ cm}$ q. $5.78 \text{ cm} = \underline{\hspace{2cm}} \text{ mm}$ r. $3.6 \text{ mm} = \underline{\hspace{2cm}} \text{ cm}$
- s. $2 \text{ km} = \underline{\hspace{2cm}} \text{ m}$ t. $15\,000 \text{ m} = \underline{\hspace{2cm}} \text{ km}$ u. $2.76 \text{ km} = \underline{\hspace{2cm}} \text{ m}$

PeRIMeter

The perimeter of a shape is the distance around the shape. Think of the work RIM in peRIMeter.

The formula for the perimeter of any polygon is:

$$\text{Perimeter} = \text{sum of all sides}$$

Example: Find the perimeter of the shape alongside.

Solution

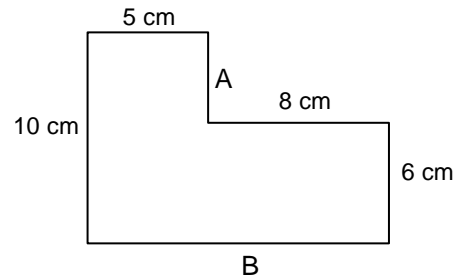
The side marked A has a length of $10 - 6 = 4$ cm

The side marked B has a length of $5 + 8 = 13$ cm

Perimeter = sum of sides

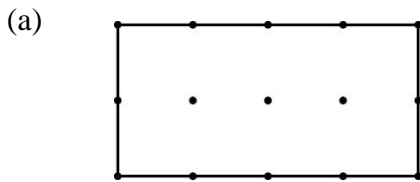
$$= 10 + 5 + 4 + 8 + 6 + 13$$

$$= 46 \text{ cm}$$

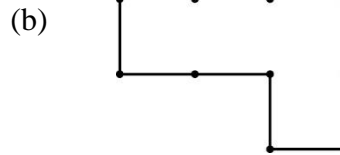


Core

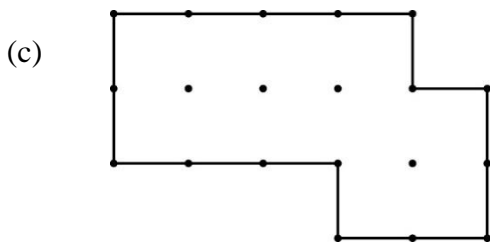
1. Find the perimeter of the shapes below.
(The dots are one centimetre apart.)



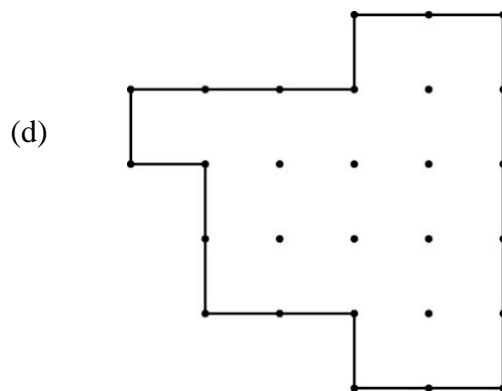
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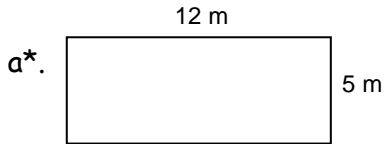


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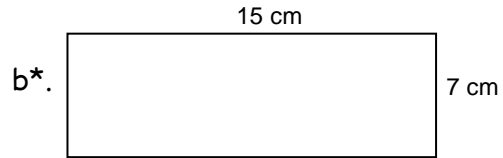


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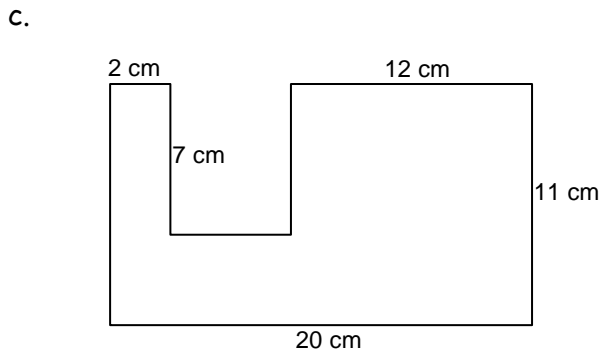
2. Find the perimeter of each of the following shapes. Set out your work.



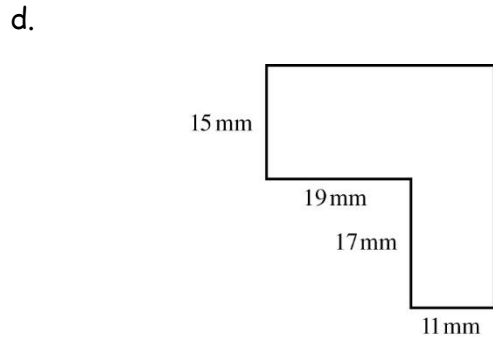
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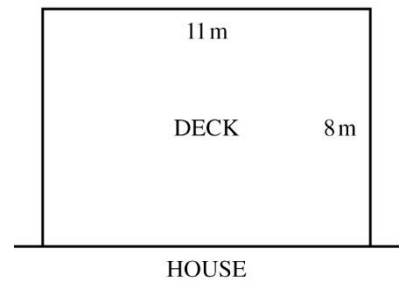


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Extended Core

3. Mike and Natalie are building a deck across the back of their house. The fence which will surround the deck will have three horizontal rails all the way around.

If the deck is 8 m wide and 11 m long, find the amount of wood needed to make the rails of the fence.

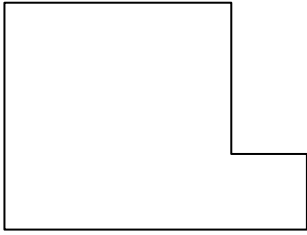


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Core

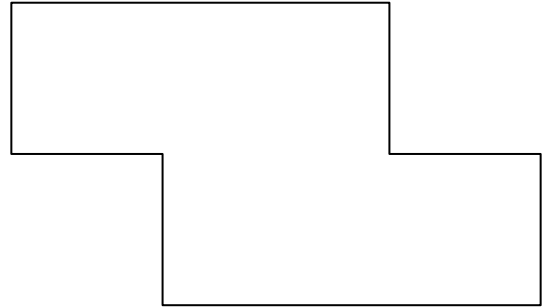
4. Find the perimeter by first measuring with a ruler.

a.



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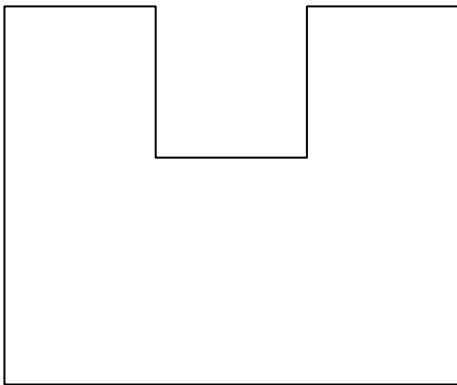
b.



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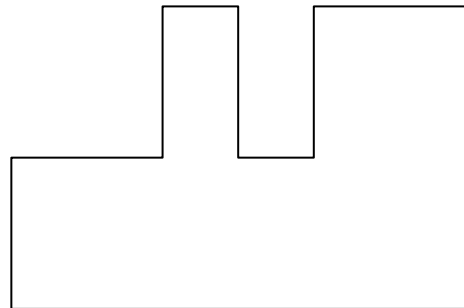
Extended Core

c.



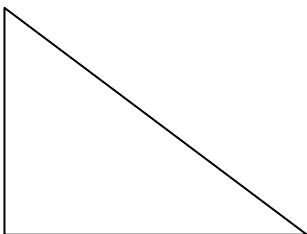
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d.



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e.



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Area

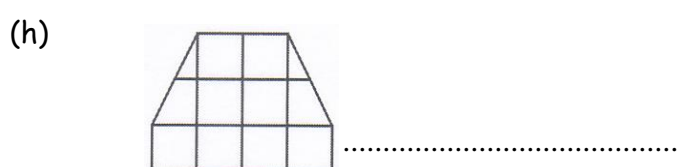
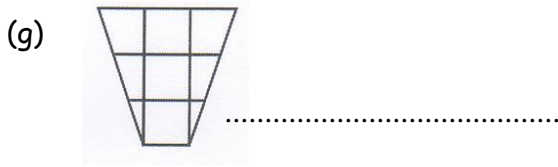
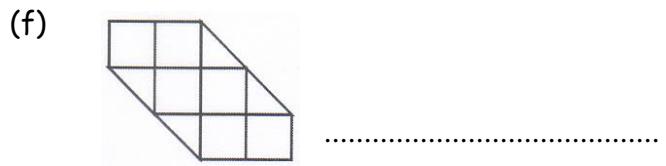
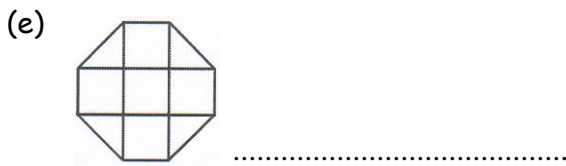
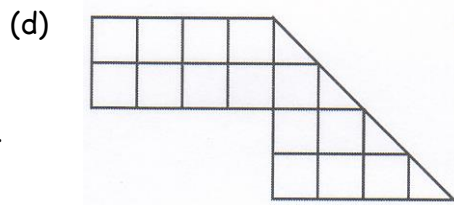
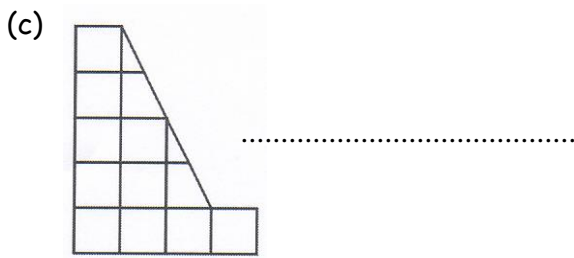
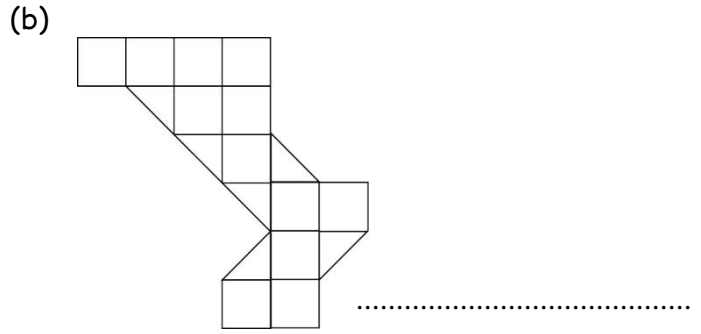
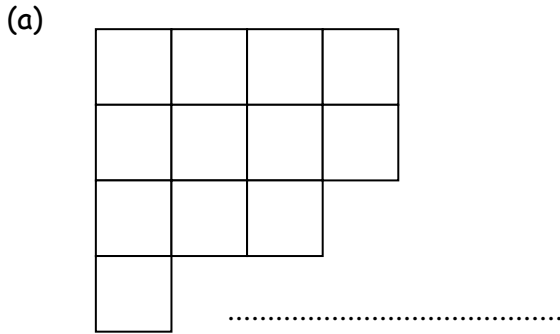
Area is a measure of the space inside a 2-dimensional shape.

Core

1. Match the following items in the left-hand column with the units that you would use to measure their area in the right-hand column.

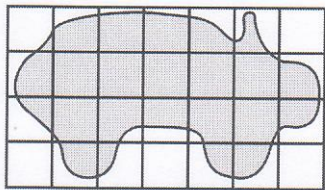
Item	Units
an exercise book	m ²
area of Fiji	mm ²
a football oval	km ²
a watch face	cm ²
your school grounds	ha

2. Find the area of the following shapes if each square has an area of 1 cm².

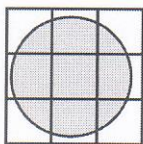


3. Estimate the area of the following shapes if each square has an area of 1 cm^2 .

a.



b.



a.

b.

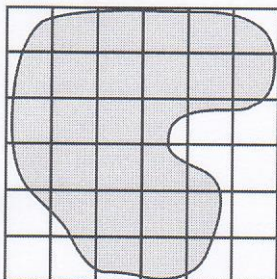
c.

d.

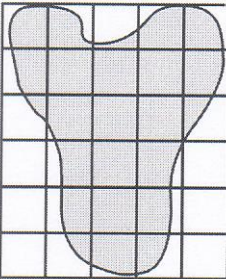
e.

f.

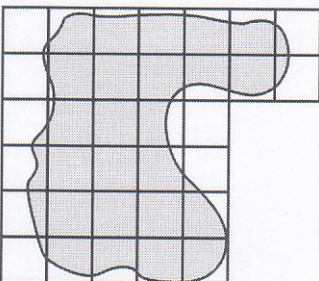
c.



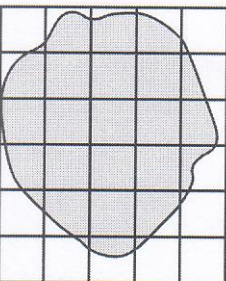
d.



e.



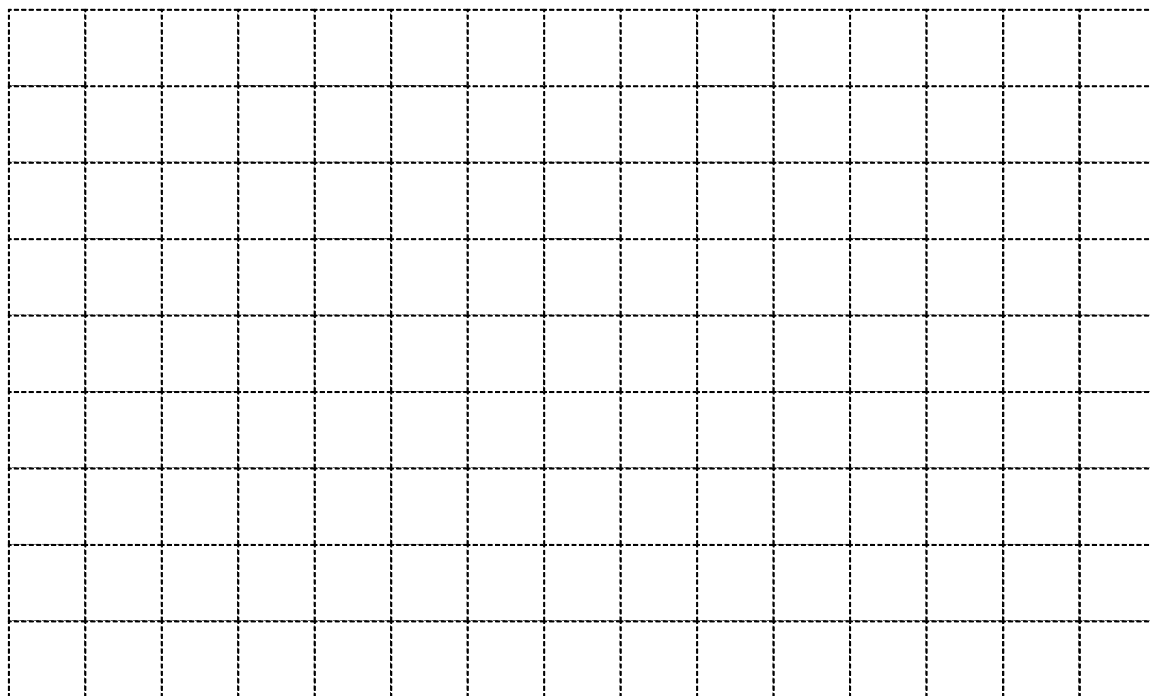
f.



Area of a Rectangle

Core

1. On the grid paper, draw 8 different rectangles.



2. Complete the table by counting the squares to find the area.

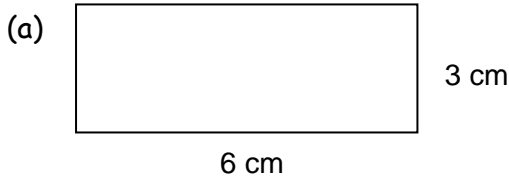
Rect. Number	Length	Width	Area
1			
2			
3			
4			
5			
6			
7			
8			

3. What is the rule for the area of a rectangle?
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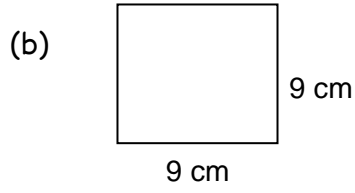
Area of a Rectangle

Core

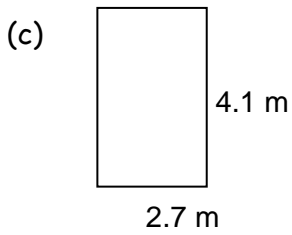
1. Find the area of the following rectangles by using the formula $A = l \times w$.



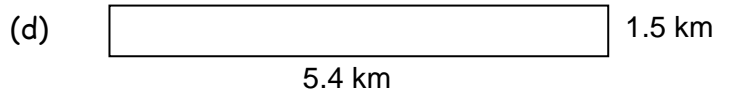
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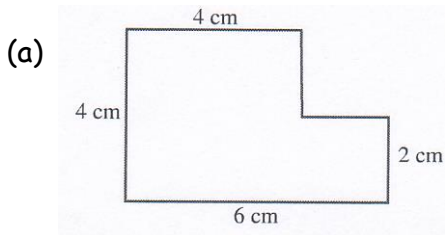


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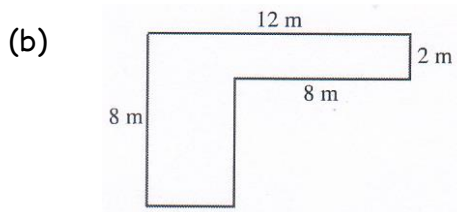


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2. Find the area of the following polygons by either:
dividing the shape into two or more rectangles, OR
finding the area of the cutout.

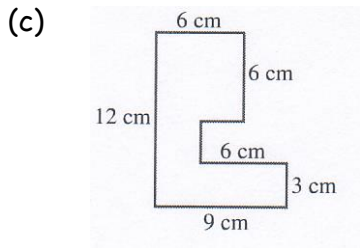


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Extended Core



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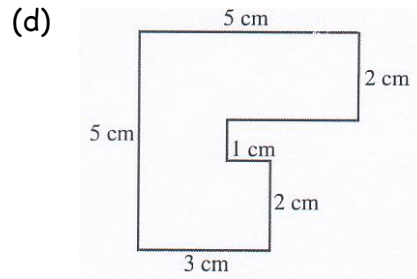
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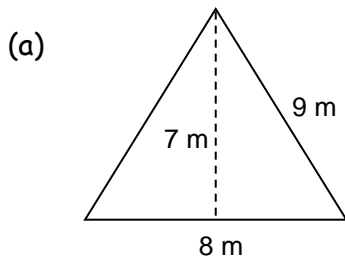
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Area of a Triangle

Core

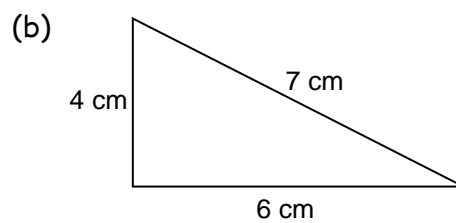
1. Find the area of the following triangles by using the formula $A = l \times w \div 2$.



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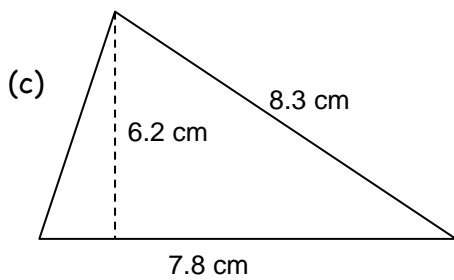
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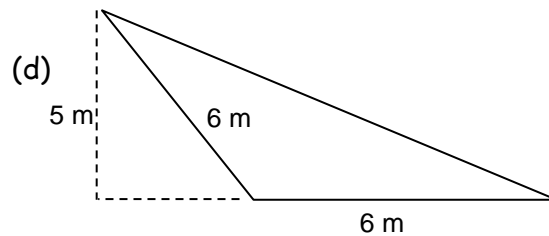
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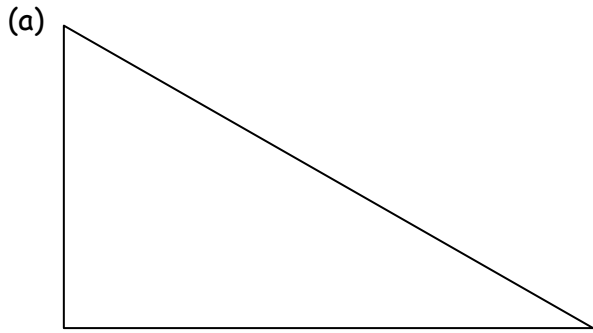


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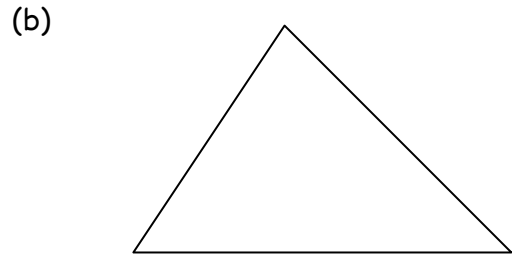
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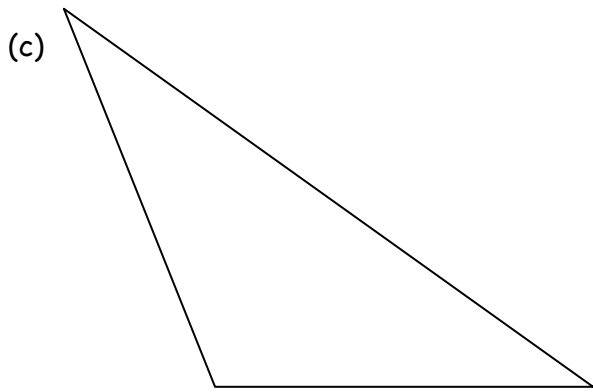
2. Find the area of the following triangles by first measuring the length and width. Then use the formula $A = l \times w \div 2$.



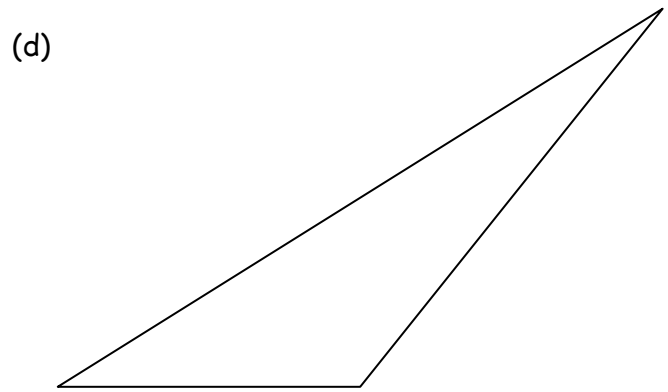
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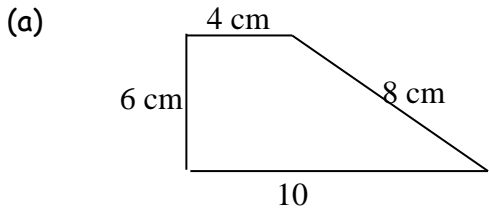


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Area of Compound Shapes

Extended Core

1. Find the area of the following polygons by dividing the shape into rectangles and triangles.



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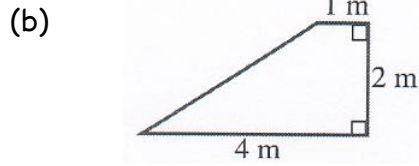
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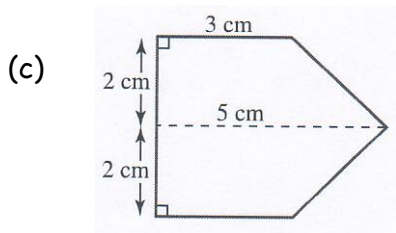
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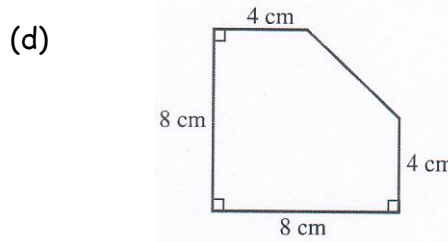
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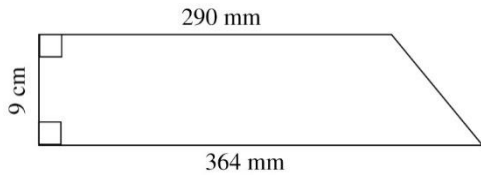
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(e)



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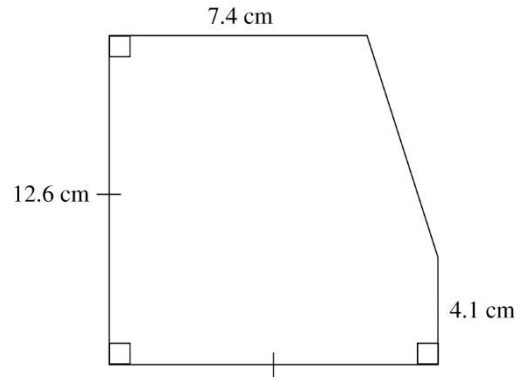
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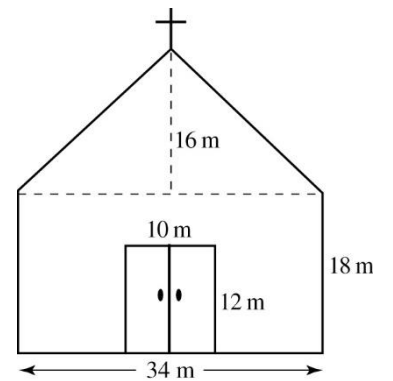
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(g) The front of a small country church needs repainting. The cost of the paint to be used on the doors is \$22.95 per square metre, while the paint for the rest of the front of the building costs \$15.95 per square metre. What is the total cost of paint required?

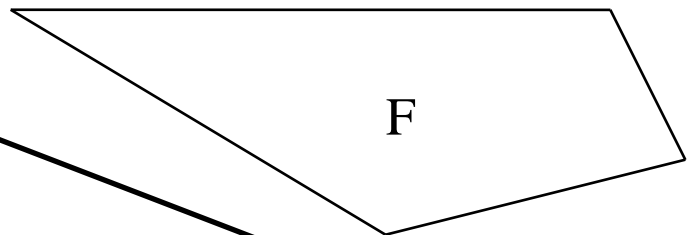
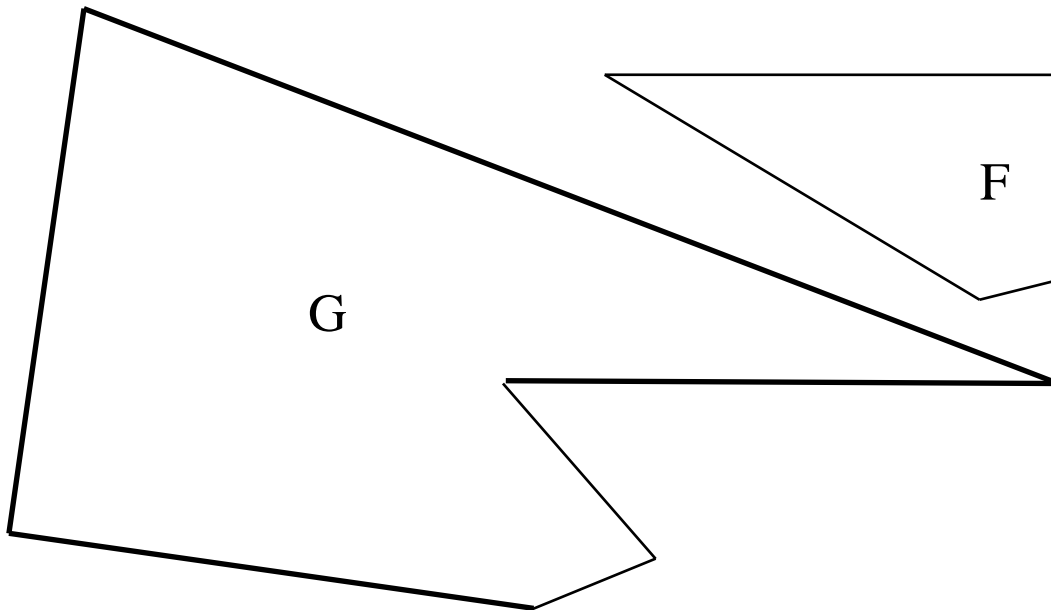
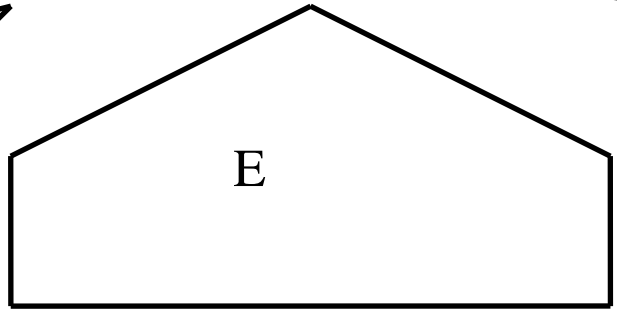
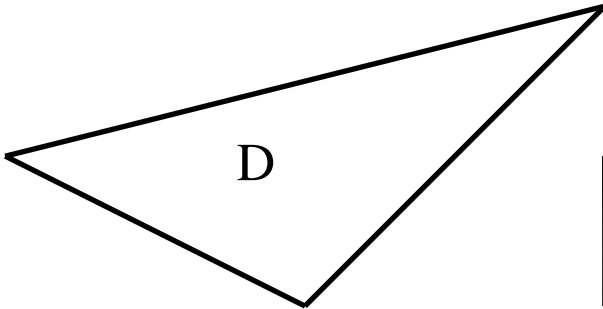
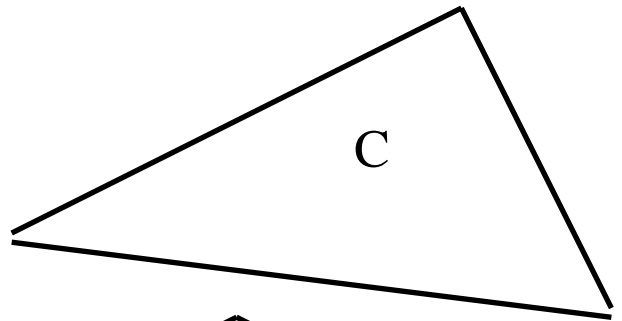
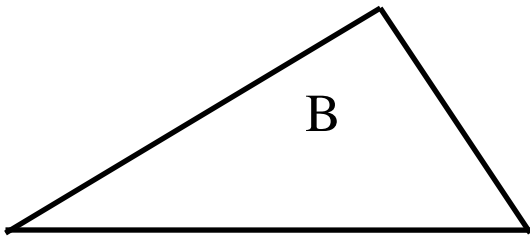
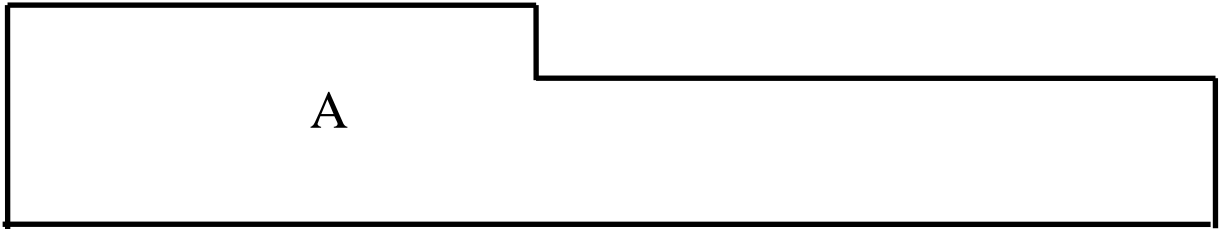
Show all working.



Area of Compound Shapes

Extension

Find the area of each of the shapes below. You will have to add some construction lines and measurements. **Show all setting out on supplied lined paper.** Express your answer in cm^2 .



Perimeter and Area Booklet

Name: _____

Page	Core	Date	Extended Core	Date
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13			Extension	

RATING: _____