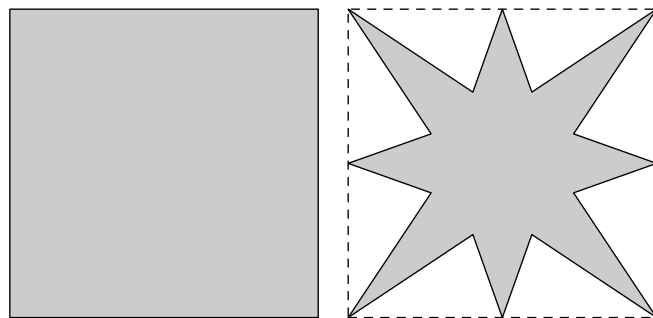


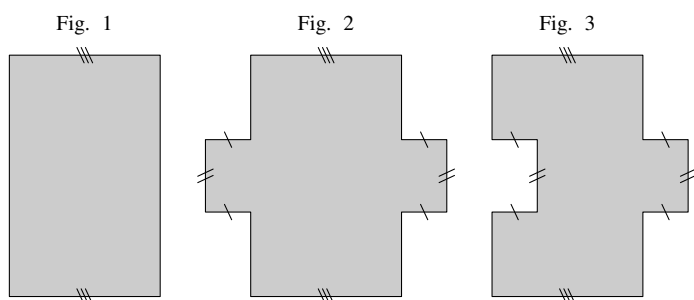
1. Comparison of the surface

E.5581    Of the two figures below, which one has the larger area:



2. Differentiate between perimeter and area

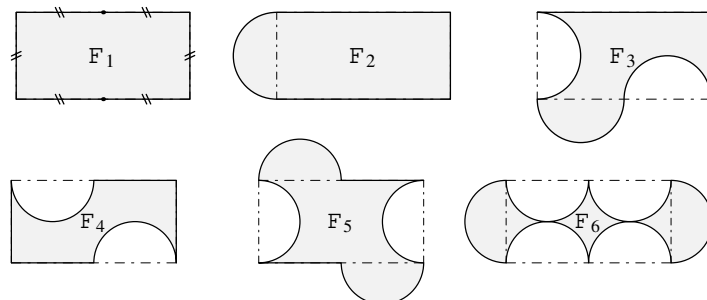
E.1686    Consider the three figures below:



- 1 Compare the perimeters of each of these figures.
- 2 Compare the areas of each of these figures.

E.5758    Below are six figures constructed from a rectangle whose length measures twice the width and half disks (remove or add) whose diameter is the width of the

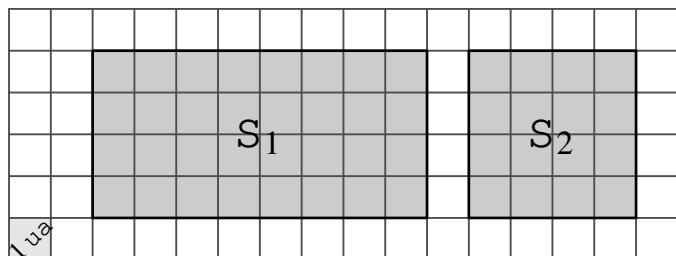
rectangle:



- 1
 - a Are there any figures that possess the same perimeter?
 - b Which figure has the largest perimeter?
- 2
 - a Are there any figures with the same area?
 - b Which figure has the largest area?

3. Areas by tiling

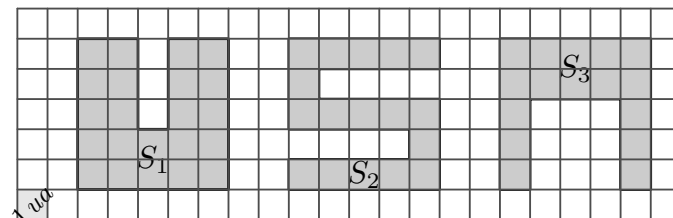
E.10519    Consider the two shaded quadrilaterals shown below in a grid. We'll use a small square of this grid as the unit of area (1 u.a.).



- 1 Measure the two surfaces S_1 and S_2 in units of area.
- 2 Recall the formulas for determining the areas of rectangles and squares.

E.11126    Consider the three shaded polygons shown below in a grid.

We will use a small square of this grid as a unit of area (1 u.a.) and its sides will represent the unit of length.

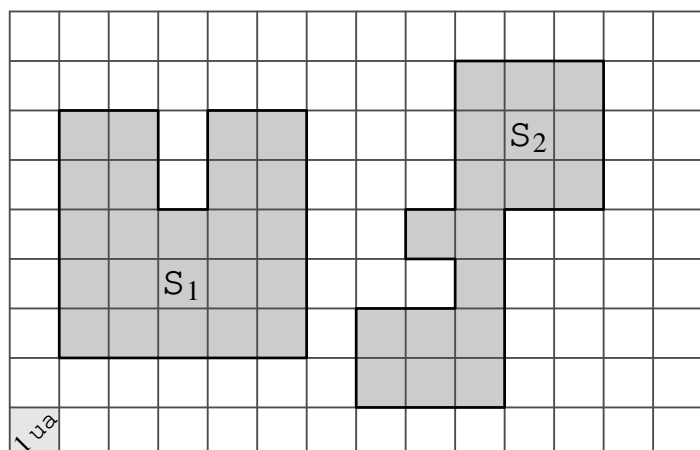


Complete the table below:

	S_1	S_2	S_3
Perimeter			
Area			

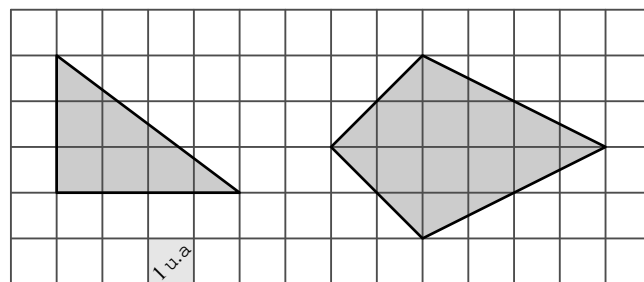
E.5588    Consider the two shaded polygons shown below in a grid.

We will use a small square of this grid as a unit of area (1 u.a.).



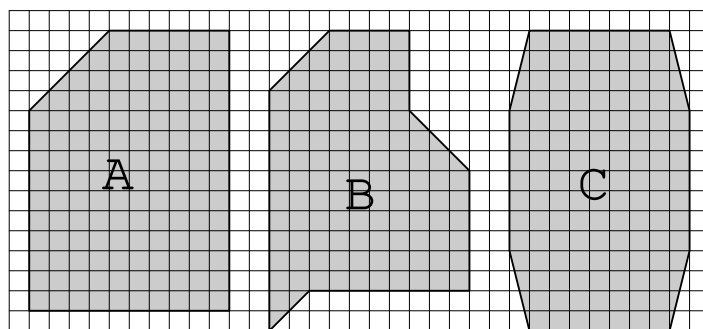
- 1 Measure the two areas S_1 and S_2 in units of area.
- 2 Compare the area of the two shaded polygons.

E.1697    In this exercise, we measure areas using the squares that form the figure's grid.



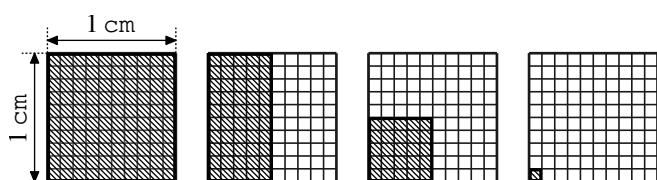
- 1 Justify that the area of the right-angled triangle is 6 squares.
- 2 Determine the area of the kite on the right.

E.2595    Determine the areas of the three figures below :



4. Area units

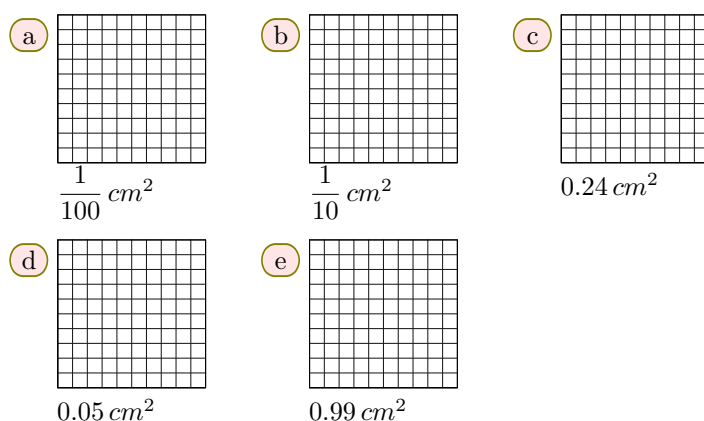
E.978    Consider the grid below, showing four hatched rectangles.



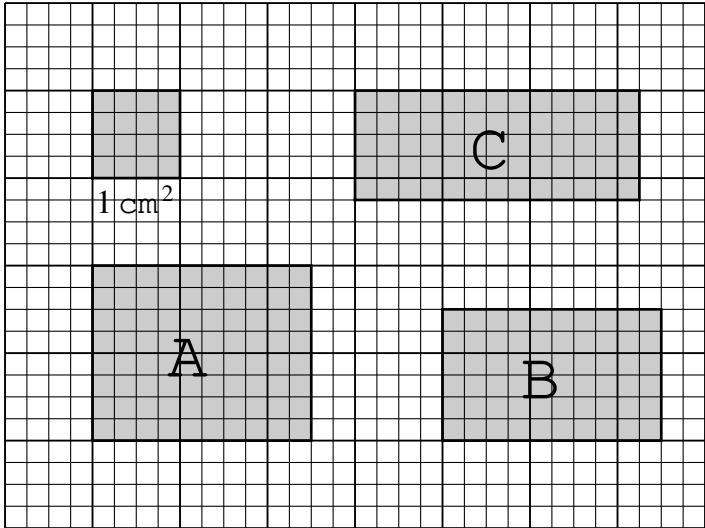
- 1 For each grid, give the fraction representing the hatched part relative to the square of side 1 cm .
- 2 Give the decimal form of each of the fractions obtained in the previous question.

E.2606    Each drawing below represents a square with a side of one centimetre. Its area is therefore one square centimetre. The grid lines shown are spaced one millimetre apart.

In each case, cross-hatch the part of the square centimetre :



E.2507    Three rectangles are shown in the grid below:

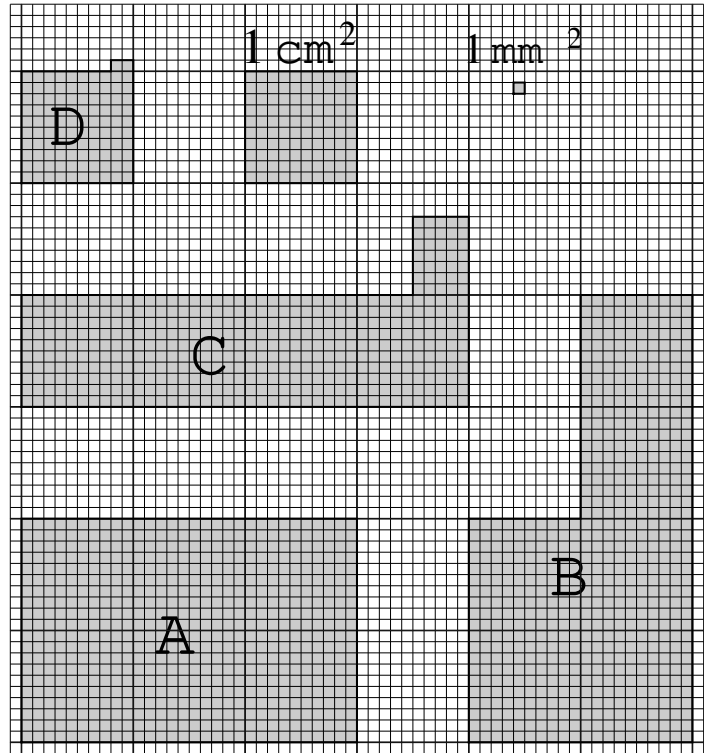


Copy and complete the table below

	Longueur (en cm)	Largeur (en cm)	Périmètre (en cm)	Aire (en cm ²)
<i>A</i>				
<i>B</i>				
<i>C</i>				

E.1693    The figure below shows the surface defined by:

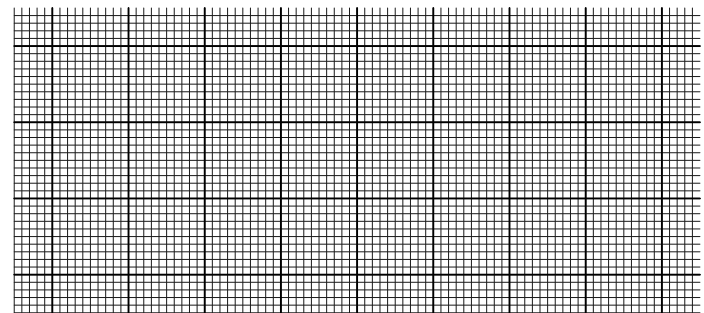
- 1 cm²: this is the area of a square of one centimeter side.
- 1 mm²: this is the area of a square one millimeter on a side.



Complete the table below by indicating the area of the four figures shown with the two units of measurement :

	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
Area in cm ²				
Area in mm ²				

E.2607    Use the millimetre paper below to obtain figures with the required area :



- The figure *A* has area 3.04 cm².
- The figure *B* has area 2.2 cm².
- Figure *C* has area 2.51 cm².

5. Areas of rectangles

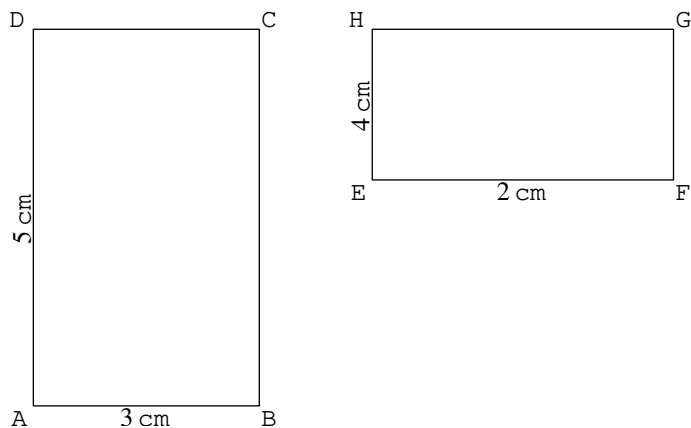
E.7930   

Proposition:

For a rectangle of length L and width ℓ :

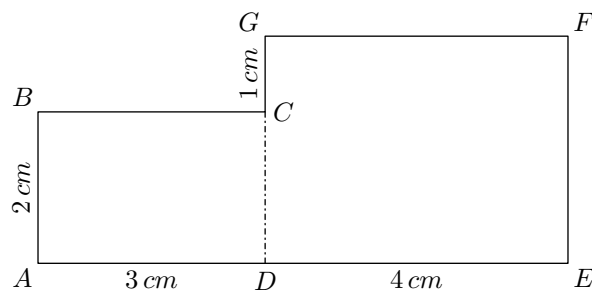
- The perimeter $\mathcal{P}$ of the rectangle has the value:
 $\mathcal{P} = 2 \times (L + \ell)$ (or $\mathcal{P} = 2 \times L + 2 \times \ell$)
- The area $\mathcal{A}$ of the rectangle has the value:
 $\mathcal{A} = L \times \ell$

Consider the two rectangles $ABCD$ and $EFGH$ shown below:



Determine the perimeters and areas of these two rectangles.

E.11096    The figure below is composed of two rectangles:



- Justify that the rectangle $DEFG$ has width 3 cm .
- Determine the perimeter of this figure.
 - Determine the area of this figure.

E.1687    Each column represents information on a rectangle.

Complete this table in full, also marking the operations performed.

	Rectangle 1	Rectangle 2	Rectangle 3
Longueur	40 m	100 m	
Largeur	15 m		20 m
Périmètre		300 m	
Aire			700 m ²

6. Area Conversions: All About Square Meters

E.11762   Recopier et effectuer les conversions suivantes:

- $54\text{ m}^2 = \dots\dots\text{ dm}^2$
- $0,17\text{ m}^2 = \dots\dots\text{ cm}^2$
- $1,07\text{ m}^2 = \dots\dots\text{ dm}^2$
- $0,904\text{ m}^2 = \dots\dots\text{ cm}^2$

E.11763   Recopier et effectuer les conversions suivantes:

- $54\text{ dm}^2 = \dots\dots\text{ m}^2$
- $184\text{ cm}^2 = \dots\dots\text{ m}^2$
- $9\text{ dm}^2 = \dots\dots\text{ m}^2$
- $1054\text{ cm}^2 = \dots\dots\text{ m}^2$

7. Area conversions

E.1700    In the table below, for each line, take the area value shown on the left and convert it to the unit shown on the right:

	km ²	hm ²	dam ²	m ²	dm ²	cm ²	mm ²
22 cm ²							mm ²
54.7 m ²							hm ²
57 m ²							dam ²
7541 dam ²							km ²
0.0451 km ²							m ²

E.1691    Copy and perform the following conversions:

- $450\text{ m}^2 = \dots\dots\text{ dam}^2$
- $35.1\text{ cm}^2 = \dots\dots\text{ dm}^2$
- $6.12\text{ dm}^2 = \dots\dots\text{ dam}^2$
- $6.5\text{ hm}^2 = \dots\dots\text{ m}^2$
- $0.0035\text{ km}^2 = \dots\dots\text{ m}^2$
- $354\text{ dm}^2 = \dots\dots\text{ dam}^2$

E.1692    Copy and perform the following conversions:

- $56\,830\text{ cm}^2 = \dots\dots\text{ m}^2$
- $7\text{ dam}^2 = \dots\dots\text{ m}^2$
- $46\,000\text{ m}^2 = \dots\dots\text{ km}^2$
- $3.5\text{ km}^2 = \dots\dots\text{ m}^2$
- $3\text{ m}^2 = \dots\dots\text{ cm}^2$
- $0.0071\text{ km}^2 = \dots\dots\text{ m}^2$
- $0.68\text{ cm}^2 = \dots\dots\text{ mm}^2$
- $1.8\text{ km}^2 = \dots\dots\text{ hm}^2$

E.4229    Copy and perform the following conversions:

- (a) $1\,200\text{ cm}^2 = \dots\dots\text{ dam}^2$ (b) $0.045\text{ km}^2 = \dots\dots\text{ dam}^2$
 (c) $2\text{ dm}^2 = \dots\dots\text{ mm}^2$ (d) $75.2\text{ dam}^2 = \dots\dots\text{ m}^2$
 (e) $0.004\,75\text{ hm}^2 = \dots\dots\text{ m}^2$ (f) $35\text{ dm}^2 = \dots\dots\text{ hm}^2$

E.11097    Copy and complete the missing dotted lines:

- (a) $42.5\text{ cm}^2 = \dots\text{ dm}^2$ (b) $0.045\text{ km}^2 = \dots\text{ dam}^2$
 (c) $0.48\text{ m}^2 = \dots\text{ cm}^2$ (d) $450\text{ mm}^2 = \dots\text{ m}^2$

E.11127    Copy and fill in the missing dotted lines:

- (a) $0.425\text{ hm}^2 = \dots\text{ m}^2$ (b) $145\text{ m}^2 = \dots\text{ dam}^2$
 (c) $9.7\text{ cm}^2 = \dots\text{ dm}^2$ (d) $4.8\text{ dam}^2 = \dots\text{ dm}^2$

E.1698    Copy and fill in the missing dotted lines.

- (a) $15\text{ m}^2 = 1500\dots$ (b) $1.3001\text{ dam}^2 = 1\,300\,100\dots$
 (c) $0.0057\text{ m}^2 = 57\dots\dots$ (d) $27.3\text{ hm}^2 = 0.273\dots\dots$

E.1699    Below, is shown area measurements using several units; adding these areas and converting to with the measurement requested.

- (a) $3\text{ hm}^2 \quad 51\text{ dam}^2 = \dots\dots\text{ km}^2$
 (b) $3\text{ dam}^2 \quad 5\text{ dm}^2 \quad 312\text{ cm}^2 = \dots\dots\text{ m}^2$

8. Area conversions and measurements in ares

E.9994    Copy and complete the missing blanks.

- (a) $5\text{ a} = \dots\dots\text{ m}^2$ (b) $450\text{ m}^2 = \dots\dots\text{ a}$
 (c) $13\text{ ha} = \dots\dots\text{ a}$ (d) $25.1\text{ a} = \dots\dots\text{ ha}$

9. Problems

E.2636    An inhabitant of Douala in Cameroon has just bought a villa whose garden has the shape of a rectangle of 35 m length and 20 m width. He plans to build a small swimming pool whose dimensions are 12 m long and 8 m wide; lawn will be laid on the rest of the garden.

- (1) Determine the area of the pool.
- (2) Determine the area occupied by the lawn.

E.1695    A person purchases a plot of 600 m^2 . Elle veut construire une maison rectangulaire de 12 m sur 7.8 m , mais pour avoir le droit de construire, la surface de la maison ne doit pas dépasser les $\frac{2}{10}$ de la surface du terrain.

- (1) What is the area of the house?
- (2) Will this person have the right to build his house?

10. Unclassified exercises

E.1222   (1) Draw the triangle ABC such that:
 $AB = 8\text{ cm}$; $\widehat{BAC} = 30^\circ$; $\widehat{ABC} = 50^\circ$

- (2) Draw the perpendicular bisector of segment $[AC]$
- (3) Tracer la hauteur issue de C