

Perimeters of Polygons

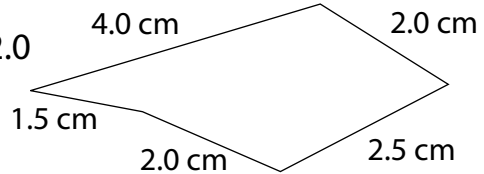


Quick Review

- We can find the perimeter of any polygon by adding the side lengths.
For this pentagon:

$$\begin{aligned} \text{Perimeter} &= 4.0 + 1.5 + 2.0 + 2.5 + 2.0 \\ &= 12 \end{aligned}$$

The perimeter is 12 cm.



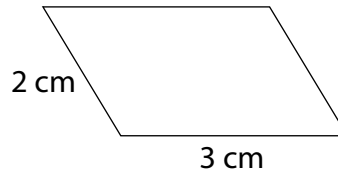
- We can use a formula to find the perimeter of some polygons.

Square



$$\begin{aligned} P &= s \times 4 \\ P &= 2 \times 4 \\ &= 8 \end{aligned}$$

Parallelogram



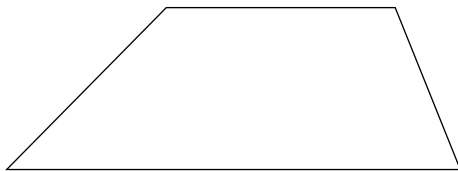
$$\begin{aligned} P &= 2 \times (\ell + s) \\ P &= 2 \times (3 + 2) \\ &= 2 \times 5 \\ &= 10 \end{aligned}$$

The perimeters of the polygons are 8 cm and 10 cm.

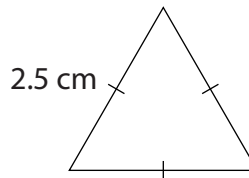
Try These

- Find the perimeter of each polygon.

a)

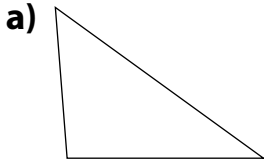


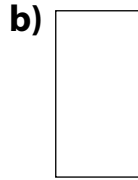
b)

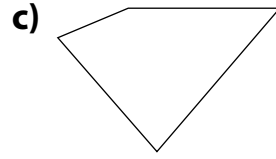


Practice

1. Find the perimeter of each polygon.







2. Kerry skates laps around the playground.

The playground is 150 m long and 50 m wide.

How many laps will it take Kerry to skate 1 km? _____

3. The perimeter of an equilateral triangle is 5.1 m. How long are its sides?
Give your answer in as many different units as you can.

4. The perimeter of an atlas is 1.4 m.

How long might each side be? _____

5. Suppose the side lengths of a rectangle are halved.

What would happen to the perimeter?

Stretch Your Thinking

One side of Kirby's rectangular garden measures 5 m.

The perimeter of the garden is 27 m.

Draw a sketch of Kirby's garden.

Label the side lengths.

Area of a Rectangle



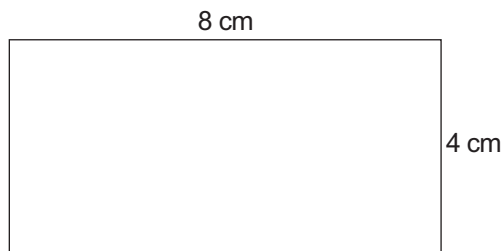
Quick Review

Here is one way to find the area of a rectangle.

- Multiply the length by the width.

$$8 \times 4 = 32$$

So, the area of the rectangle is 32 cm^2 .



Rule:



To find the area of a rectangle, multiply the length by the width.

Formula:



$$\text{Area} = \text{length} \times \text{width}$$

$$A = \ell \times w$$

Try These

Find the area of each rectangle.
Complete the chart.

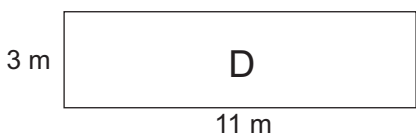
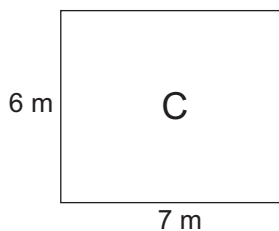
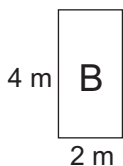
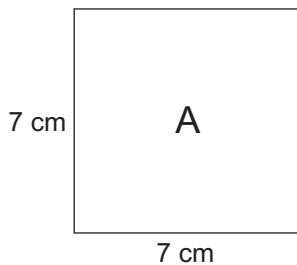
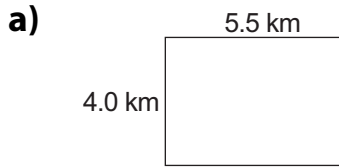


Figure	Area
A	
B	
C	
D	
E	
F	

Practice

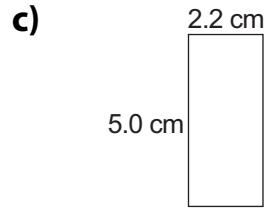
1. Find the area of each rectangle.



Area = _____



Area = _____



Area = _____

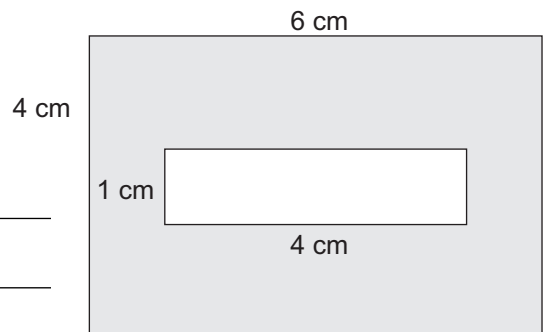
2. Measure the length and width of each object to the nearest unit. Use these dimensions to find the area. Record your work in the chart.

Object	Length	Width	Area
a tabletop			
the classroom floor			
a sheet of paper			
a page from a magazine			

3. Draw a rectangle with an area of 12 cm^2 . Label the side lengths.

Stretch Your Thinking

Find the area of the shaded part of the rectangle. Show all your work.



Volume of a Rectangular Prism



Quick Review

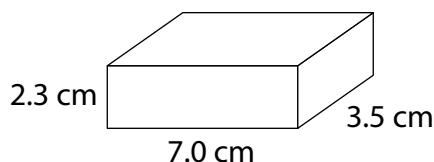
You can use a formula to find the volume of a rectangular prism. The volume is the product of the prism's length, width, and height.

Volume = length \times width \times height

$$V = \ell \times w \times h$$

This rectangular prism is 7.0 cm long, 3.5 cm wide, and 2.3 cm high.

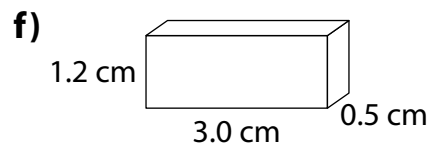
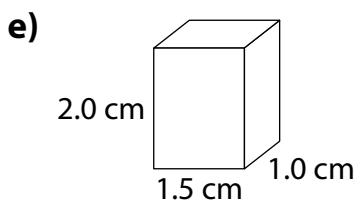
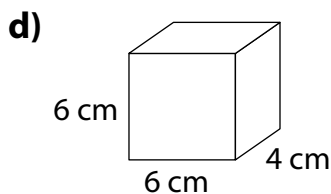
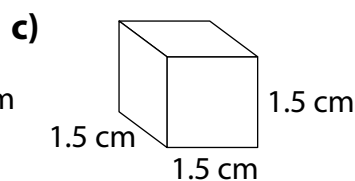
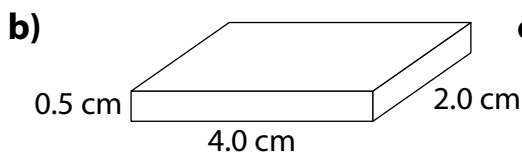
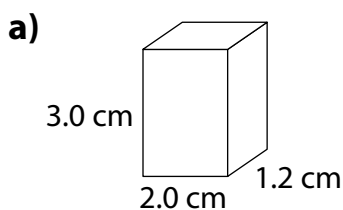
$$\begin{aligned} \text{Volume} &= 7.0 \text{ cm} \times 3.5 \text{ cm} \times 2.3 \text{ cm} \\ &= 24.5 \text{ cm}^2 \times 2.3 \text{ cm} \\ &= 56.35 \text{ cm}^3 \end{aligned}$$



The volume of the prism is 56.35 cm³.

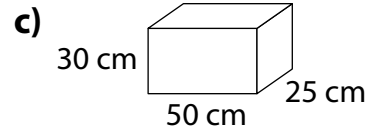
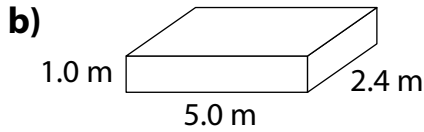
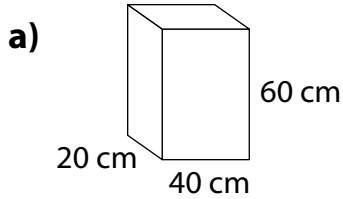
Try These

1. Find the volume of each rectangular prism.



Practice

1. Find the volume of each box.



2. Work with a partner.

a) Find 4 small boxes. Label the boxes A, B, C, and D.

b) Measure the dimensions of each box. Estimate, then calculate, each volume. Record your results in the table.

Box	Length	Width	Height	Estimated Volume	Actual Volume
A					
B					
C					
D					

3. Complete each table.

a)

Length (cm)	Width (cm)	Height (cm)	Volume (cm ³)
6	9	3	
8		2	80
4	3		48
	5	5	125

b)

Length (cm)	Width (cm)	Height (cm)	Volume (cm ³)
5.3	4.0	7.1	
6.0	3.2		96
	2.0	1.1	22
12.0		4.0	120

Stretch Your Thinking

Jocelyn built a rectangular prism with 36 centimetre cubes.

What might be the dimensions of the prism? Give as many answers as you can.
