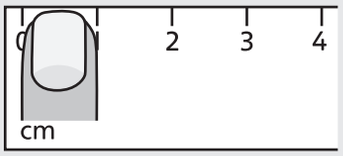
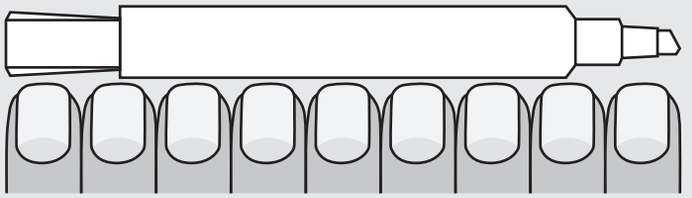
ME3-I Measuring in Centimetres

A **centimetre (cm)** is a unit of measurement for **length**.

Your index finger is about
I **centimetre (cm)** wide.





The marker is about 9 cm long.

1. Use your index finger to estimate the length to the closest centimetre.

a) My pen is about _____ cm long.

b) My pencil is about _____ cm long.

c) My crayon is about _____ cm long.

d) My eraser is about _____ cm long.

e) My JUMP Math book is about _____ cm wide.

f) My desk is about _____ cm wide.

2. Your hand is about 10 cm wide. Use your spread-out hand to estimate the length.

a) My JUMP Math book is about _____ cm long.

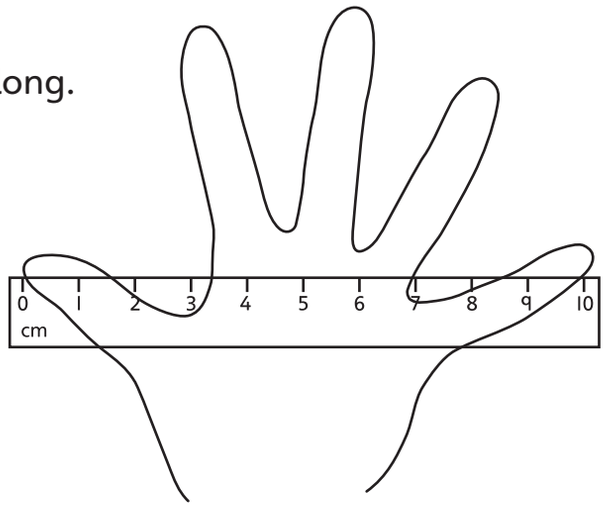
b) My desk is about _____ cm long.

c) My arm is about _____ cm long.

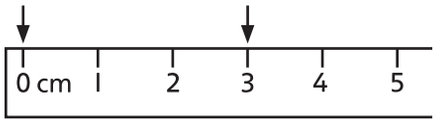
d) My leg is about _____ cm long.

e) My shoe is about _____ cm long.

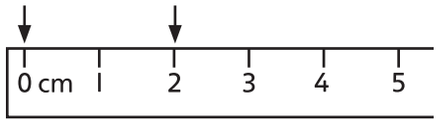
BONUS ▶ My desk is about _____ cm tall.



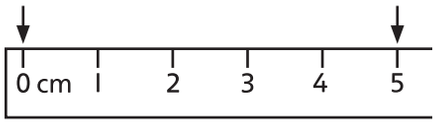
3. How far apart are the arrows?

a) 

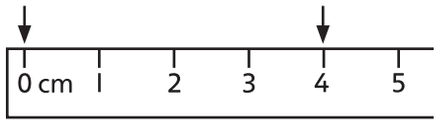
3 cm

b) 

_____ cm

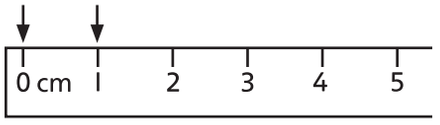
c) 

_____ cm

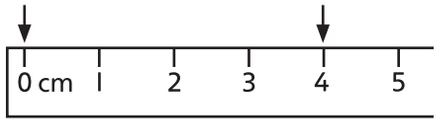
d) 

_____ cm

4. Measure the distance between the arrows.

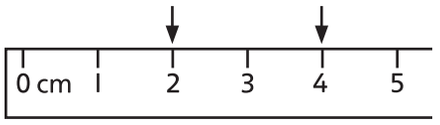
a) 

_____ cm

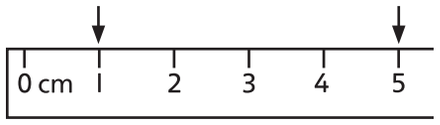
b) 

_____ cm

BONUS ▶

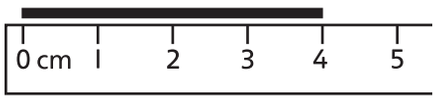
c) 

_____ cm

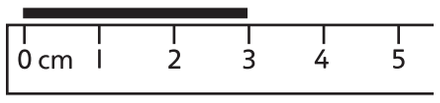
d) 

_____ cm

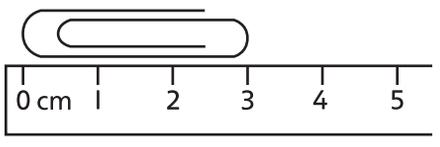
5. Measure the length of the line or object.

a) 

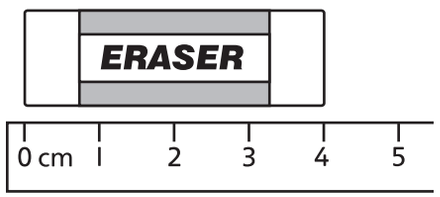
_____ cm

b) 

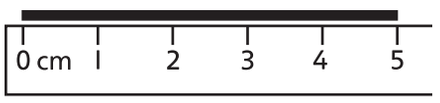
_____ cm

c) 

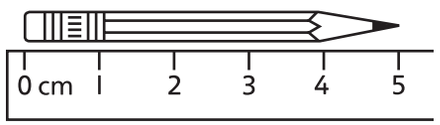
_____ cm

d) 

_____ cm

e) 

_____ cm

f) 

_____ cm

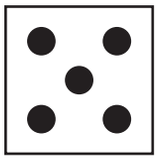
6. Measure the length of the line or object.

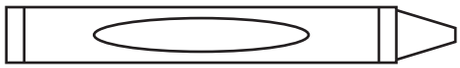
a) _____ cm

b) _____ cm

c) _____ cm

d) _____ cm

e)  _____ cm

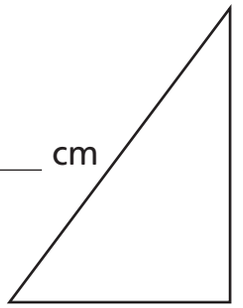
f)  _____ cm

7. Measure all the sides of the shape.

a) _____ cm

_____ cm  _____ cm

_____ cm

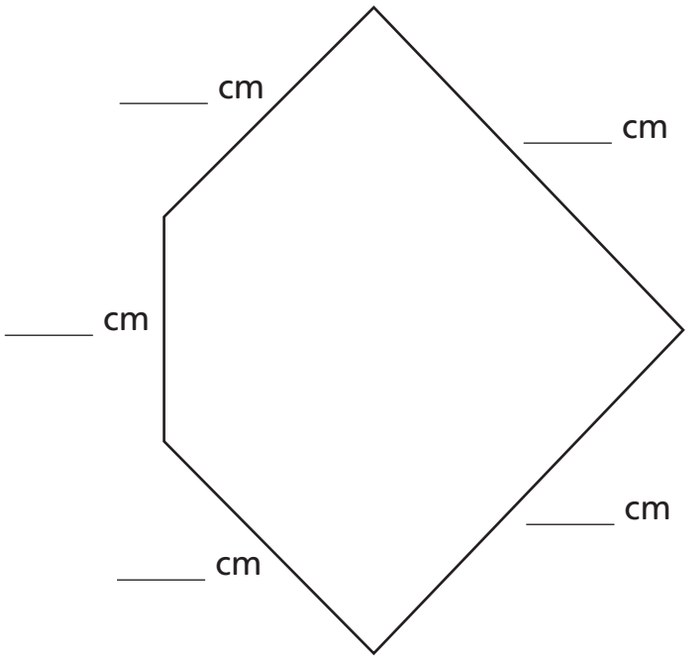
b) 

_____ cm

_____ cm

_____ cm

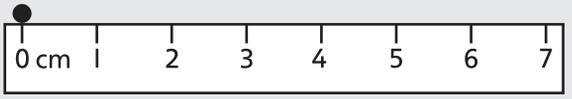
BONUS ▶



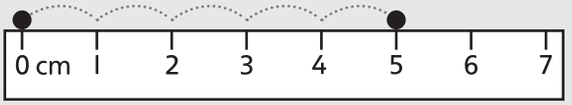
ME3-2 Measuring and Drawing in Centimetres

Tasha wants to draw a line that is 5 cm long.

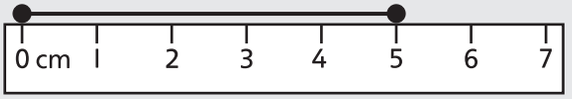
She draws a dot at the zero mark on the ruler.



She counts on 5 cm and draws a second dot.

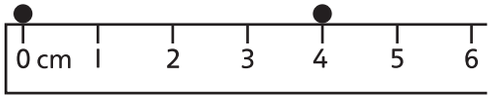


She connects the dots.

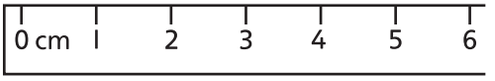


1. Draw the dots to show the given distance.

a) 4 cm apart

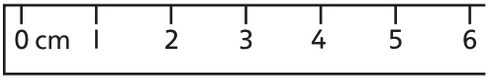


b) 2 cm apart



c) 3 cm apart

d) 1 cm apart

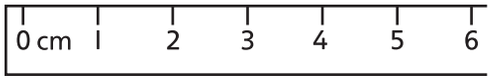


2. Draw a line that has the given length.

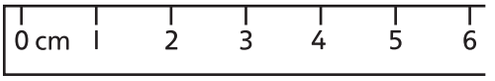
a) 1 cm long

b) 4 cm long

c) 3 cm long



d) 6 cm long



3. Is the line more than 10 cm long? Estimate. Then measure to check.

		More than 10 cm	Actual Length
a)		*No*	*6 cm*
b)			
c)			
d)			
e)			

4. Are the dots less than 10 cm apart? Estimate. Then measure to check.

		Less than 10 cm	Distance (cm)
a)			
b)			
c)			
d)			
e)			

5. Draw a line that has the given length. Use a ruler.

a) 5 cm long b) 10 cm long c) 13 cm long

6. Sketch a line that has the given length. Do not use a ruler.

a) 7 cm long b) 9 cm long c) 14 cm long

7. Draw the object to the exact measurement.

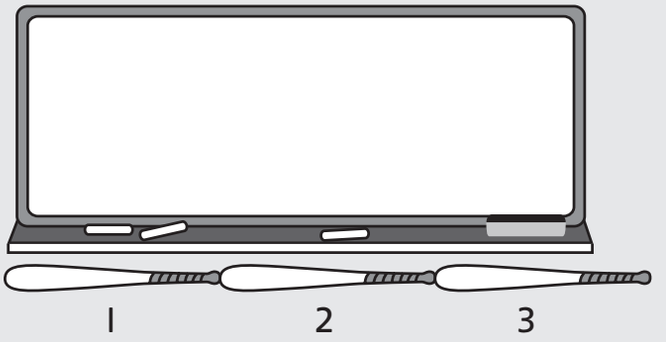
a) a worm, 5 cm long b) a leaf, 11 cm long c) a spoon, 9 cm long

ME3-3 Metres

A baseball bat is about I **metre** long.

We write **m** for metre.

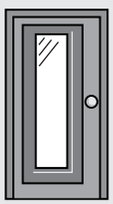
The blackboard is about 3 m long.



I. Estimate. Then measure to the closest metre.

	Object	Estimate (m)	Measurement (m)
a)	Length of a board		
b)	Height of a board		
c)	Width of a cupboard		
d)	Height of a cupboard		
e)	Width of a classroom window		
f)	Length of the classroom		

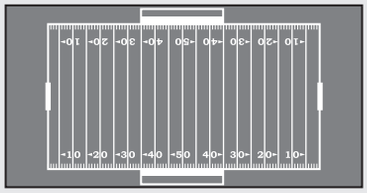
Use these lengths to estimate.



A door is about 2 m tall.

A bike is about 2 m long.

A school bus is about I0 m long.



A football field is about I00 m long.

2. a) A car is about 2 bikes long. How long is the car? _____

b) A large truck is as long as 2 school buses. How long is the truck? _____

c) Kim runs 6 lengths of a football field. How far does she run? _____

3. A door is about 2 m tall. Each floor of a building is about two doors tall.

a) How many floors does your school have? _____

b) About how tall is your school? _____

4. a) About how many school buses can park along your school playground?

b) How many metres long do you think your school playground is? Explain.

5. a) Tina runs 250 m, then walks 450 m. How far does she travel?

b) Cam walks 125 m, runs 350 m, then walks 125 m. How far does he travel?

c) Who travels farther, Tina or Cam?

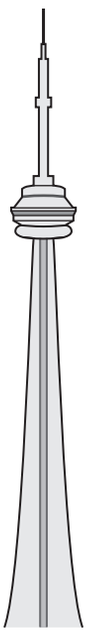
6. Ren has 120 m of white yarn, 325 m of red yarn, and 45 m of blue yarn. He needs a total of 450 m of yarn to make a pair of socks.

a) Does Ren have enough yarn for white and red socks?

b) Does Ren have enough yarn for blue and red socks?

7. The table shows the heights of some tall towers in Canada.

Tower	Location	Height (m)
CN Tower	Toronto, ON	553
Ryan Tower	Chelsea, QC	229
Calgary Tower	Calgary, AB	191
Bell Aliant Tower	Moncton, NB	127



a) How much taller is the CN Tower than the Ryan Tower?

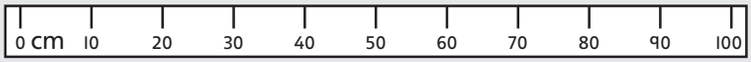
b) How much shorter is the Bell Aliant Tower than the Calgary Tower?

c) How much taller is the Ryan Tower than the Bell Aliant Tower?

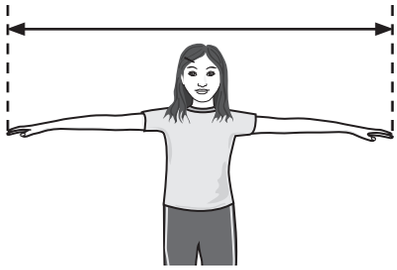
d) Make your own question about the height of towers. Share your question and ask a classmate to solve it.

ME3-4 Metres and Centimetres

A metre stick is about 100 cm long.
1 m = 100 cm



1. a) Stretch your arms out. The distance in the picture is called your **arm span**.

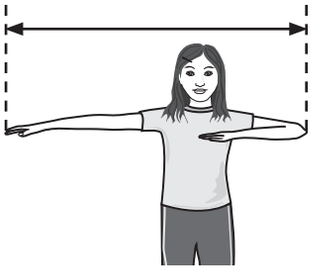


Ask a classmate to measure your arm span with a piece of string.

Arm span = _____ cm

Is your arm span more or less than a metre? _____

b) Stretch your arms out. Bend one elbow as shown. The distance in the picture is called your **arm-and-elbow span**.



Ask a classmate to measure your arm-and-elbow span with a piece of string.

Arm-and-elbow span = _____ cm

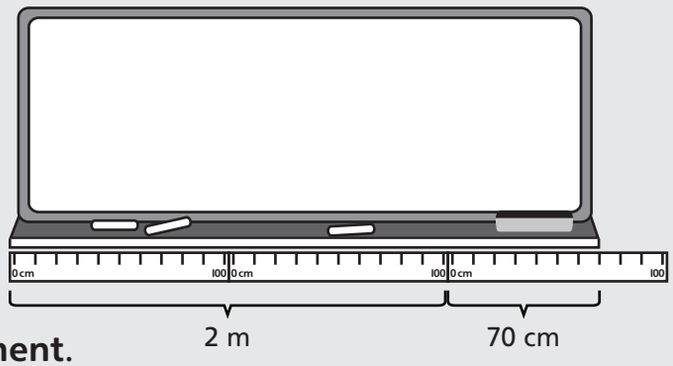
Is your arm-and-elbow span more or less than 1 m? _____

c) Which distance is closest to 1 m? _____

Ed uses a metre stick to measure the length of the board. The board is more than 2 m long.

Ed measures the leftover length in centimetres. The board is 2 m 70 cm long.

A measurement in metres and centimetres is called a **mixed measurement**.



2. Measure in metres and centimetres.

a) Width of a cupboard = _____ m _____ cm

b) Height of the back of a chair = _____ m _____ cm

c) Width of a window = _____ m _____ cm

d) Length of a board = _____ m _____ cm

e) Length of a carpet = _____ m _____ cm

3. Write the measurements in centimetres.

Metres	1 m	2 m	3 m	4 m	5 m	6 m	7 m	8 m
Centimetres	*100 cm*	*200 cm*						

4. Change the metres to centimetres. Change the mixed measurement to centimetres.

a) 3 m = *300* cm,
so 3 m 5 cm
= *300 + 5* cm
= *305* cm

b) 5 m = _____ cm,
so 5 m 15 cm
= _____ cm
= _____ cm

c) 2 m = _____ cm,
so 2 m 73 cm
= _____ cm
= _____ cm

d) 4 m = _____ cm,
so 4 m 8 cm
= _____ cm
= _____ cm

e) 6 m = _____ cm,
so 6 m 20 cm
= _____ cm
= _____ cm

f) 1 m = _____ cm,
so 1 m 3 cm
= _____ cm
= _____ cm

5. Change the mixed measurement to centimetres.

a) 7 m 70 cm
= *700 + 70* cm
= _____ cm

b) 9 m 99 cm
= _____ cm
= _____ cm

c) 8 m 1 cm
= _____ cm
= _____ cm

d) 3 m 25 cm
= _____ cm

e) 7 m 76 cm
= _____ cm

f) 2 m 2 cm
= _____ cm

6. Circle the digit that shows the metres.

a) (3)05 cm b) 516 cm c) 283 cm d) 402 cm e) 650 cm f) 107 cm

BONUS ▶ Change the metres to centimetres. Write the lengths of the animals from shortest to longest.

Animal	Bengal tiger	Canadian lynx	Cougar	Snow leopard
Length	2 m 90 cm	90 cm	2 m 20 cm	2 m

ME3-5 Kilometres

A **kilometre (km)** is a unit of measurement for long distances. 1 km = 1000 m

1. a) 1000 = _____ hundreds = _____ tens = _____ ones

b) A football field is about 100 m long. How many football fields long is 1 km? _____

c) A school bus is about 10 m long. How many school buses can park end to end along a 1 km distance? _____

2. You can walk 1 km in about 15 minutes. Name a place that is about 1 km from your home or school. _____

3. a) What is longer, 999 m or 1 km? How do you know? _____

_____

b) Emma thinks that 5 km is shorter than 850 m, because 5 is less than 850. Is she correct? Explain.

_____

_____

4. a) Is the object less than 1 m long, about 1 m long, or more than 1 m long?

a paper clip _____ a bicycle _____

a book _____ a baseball bat _____

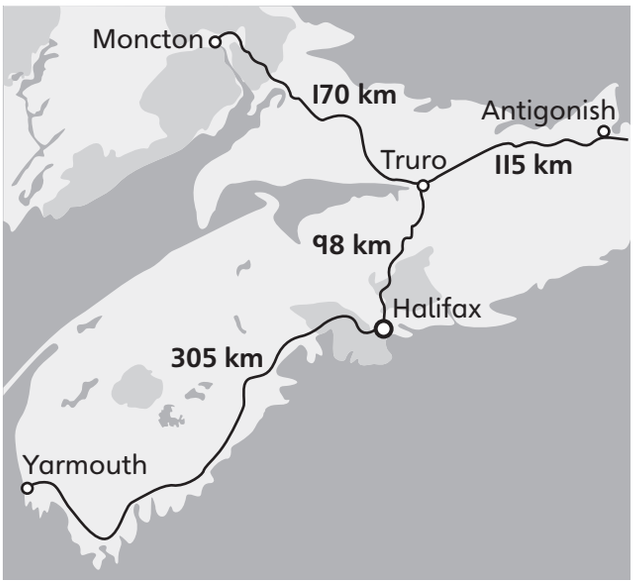
b) Suppose the objects are lined up end to end. Is the line less than 1 km long, about 1 km long, or more than 1 km long?

1000 paper clips _____ 1000 bicycles _____

1000 books _____ 1000 baseball bats _____

BONUS ▶ 500 bicycles _____

5. Use the map to write the distances between the cities.



a) Moncton and Truro _____ km

b) Yarmouth and Halifax _____ km

c) Truro and Antigonish _____ km

d) Halifax and Truro _____ km

6. Use the map to answer the questions.

a) Jin travels from Moncton to Truro and then to Antigonish. How far does he travel?

b) Rani travels from Yarmouth to Halifax and then to Truro. How far does she travel?

c) David travels from Halifax to Truro, then to Moncton. How far does he travel?

d) Order the distances Jin, Rani, and David travel from longest to shortest.

e) How much farther is it from Halifax to Yarmouth than from Halifax to Moncton?

f) Make your own question using the distances on the map. Solve it.

7. The map shows part of Yukon Territory.

a) The distance from Carmacks to Whitehorse is 177 km. The distance from Watson Lake to Whitehorse is 261 km longer.

How far is Carmacks from Watson Lake?

b) Liz drives from Carmacks to Whitehorse and then to Watson Lake. How far does she drive?

c) There is another road from Carmacks to Watson Lake. This road is 584 km long.

Which road from Carmacks to Watson Lake is longer, the road through Whitehorse, or the other road? How much longer?

ME3-6 Choosing Units

A finger is about I cm wide.	A giant step is about I m long.	A door handle is about I m above the floor.	You can walk I km in about I5 minutes.

I. Draw a line to match the object to the best unit to measure it.

a) length of a beetle — m
height of a door — cm

b) height of an adult — m
distance to the moon — km

c) height of a drum — km
distance across an ocean — cm
height of a teepee — m

d) width of a book — m
length of a river — km
height of a house — cm

2. Order the lengths from shortest to longest. Write "Ist" for the shortest, "2nd" for the middle length, and "3rd" for the longest.

a) length of a beetle _____
distance an airplane flies _____
length of a classroom _____

b) length of a carrot _____
length of a bus _____
distance across a bridge _____

3. Order the lengths from shortest "Ist" to longest "3rd." Write the best unit to measure each length. Choose from centimetres, metres, and kilometres.

a)  

b)   

3rd	_____	_____	_____	_____	_____
Unit *m*	Unit _____	Unit _____	Unit _____	Unit _____	Unit _____

4. Circle the best unit to measure the length.

a) length of a plane — cm m km
b) height of a building — cm m km
c) width of a coin — cm m km
d) height a plane flies — cm m km
e) height of a cup — cm m km
f) length of a pen — cm m km
g) width of a paddle — cm m km
h) distance to North Pole — cm m km

REMINDER ▶ 1 m = 100 cm

5. Change the measurement from metres to centimetres.

a) 5 m = *500* cm b) 3 m = _____ cm c) 7 m = _____ cm

6. Change the measurement from metres to centimetres. Circle the greater measurement.

a) 3 m 5 cm
= _____ cm

b) 5 m 45 cm
= _____ cm

c) 780 cm 6 m
= _____ cm

7. Change metres to centimetres. Add the leftover centimetres.

a) 3 m 45 cm
= *300* cm + *45* cm
= *345* cm

b) 5 m 80 cm
= _____ cm + ____ cm
= _____ cm

c) 1 m 4 cm
= _____ cm + ____ cm
= _____ cm

d) 6 m 54 cm
= _____ cm + ____ cm
= _____ cm

e) 7 m 30 cm
= _____ cm + ____ cm
= _____ cm

f) 2 m 9 cm
= _____ cm + ____ cm
= _____ cm

8. Change the mixed measurement to centimetres. Circle the greater measurement.

a) 3 m 2 cm 5 cm
= _____ cm

b) 6 m 5 cm 65 cm
= _____ cm

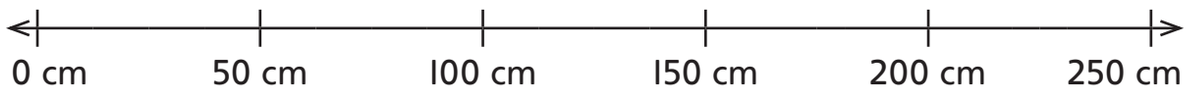
c) 280 cm 2 m 90 cm
= _____ cm

BONUS ▶ Order the lengths in Question 8 from shortest to longest.

_____

9. Change all measurements to centimetres. Show the measurements on the number line.

A. 50 cm **B.** 1 m = _____ **C.** 2 m 50 cm = _____



10. The table shows the lengths of snakes at a zoo.

a) Change all measurements to centimetres.

b) Order the snakes from longest to shortest.

_____

_____

_____

_____

Snake	Length	Length (cm)
Coral snake	73 cm	
Fox snake	1 m 23 cm	
Yellow-bellied Racer	2 m	
Rattlesnake	1 m 30 cm	

11. Circle the correct length of the object.

a) length of a bed

195 cm or 195 m

b) length of a bus

10 m or 10 km

c) length of a toothbrush

16 cm or 16 m

d) length of a driveway

9 cm or 9 m

e) height of a school

14 cm or 14 m

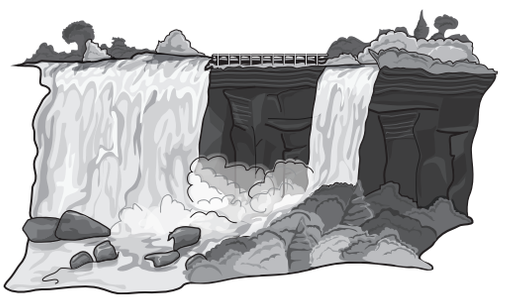
f) width of a street

40 m or 40 km

12. Fill in the best unit for the measurement. Choose from cm, m, and km.

a) The Canadian Horseshoe Falls at Niagara Falls, ON, is as tall as a 12 floor building.

The falls are about 57 _____ tall.



b) A raccoon can grow up to 70 _____ long.

c) A black bear is about 2 _____ long.

d) A maple leaf is about 16 _____ wide.

13. Would you measure the distance in metres or in kilometres? Explain your choice.

a) from your classroom to the school office

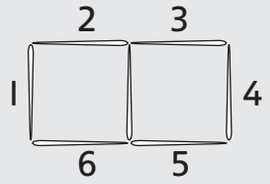
b) from your home to the airport

c) from Ottawa, ON, to Edmonton, AB

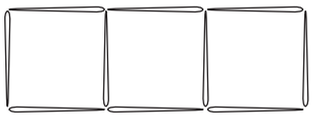
d) around the schoolyard

ME3-7 Measuring Around a Shape—Perimeter

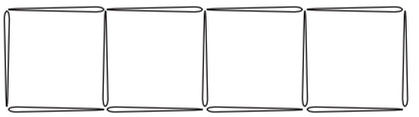
The distance around the outside of a shape is the **perimeter** of the shape.
The perimeter of this shape is 6 toothpicks.



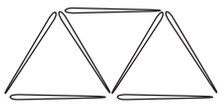
1. Count the number of toothpicks around the outside of the figure.

a) 

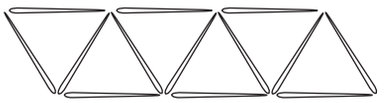
Perimeter = _____ toothpicks

b) 

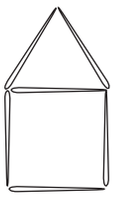
Perimeter = _____ toothpicks

c) 

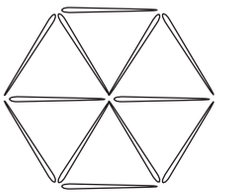
Perimeter = _____ toothpicks

d) 

Perimeter = _____ toothpicks

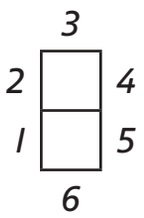
e) 

Perimeter = _____ toothpicks

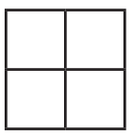
f) 

Perimeter = _____ toothpicks

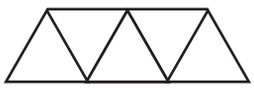
2. Find the perimeter.

a) 

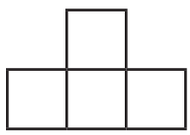
6 units

b) 

_____ units

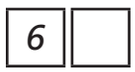
c) 

_____ units

d) 

_____ units

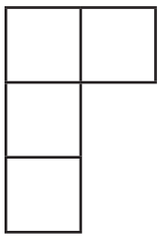
3. Add. Use the boxes to keep track of the sum.



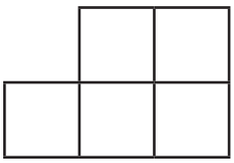
a) 2 + 4 + 2 + 4 = _____

b) 3 + 3 + 1 + 1 + 2 + 2 = _____

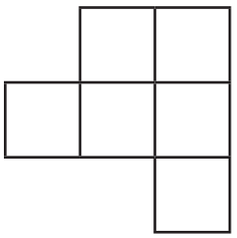
4. Each small square is 1 cm long and 1 cm wide. Find the perimeter of the figure.

a) 

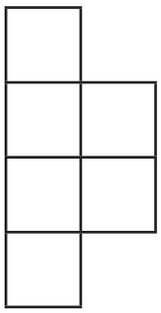
_____ cm

b) 

_____ cm

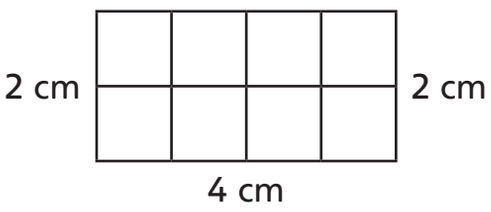
c) 

_____ cm

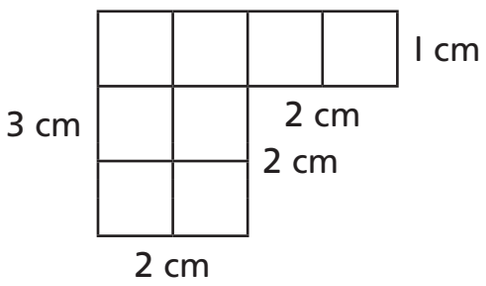
d) 

_____ cm

5. The length of each side of the figure is given. Add the lengths to find the perimeter.

a) 

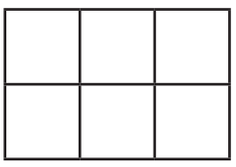
_____

b) 

_____

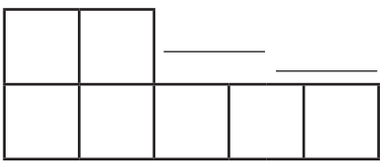
6. Find the perimeters of the figures in Question 5 by counting centimetres along the outside. Did you get the same answers as before? _____

7. Each small square is 1 cm long and 1 cm wide. Find the length of each side of the figure. Then write an addition sentence for the perimeter.

a) _____  *2 cm*

_____

_____

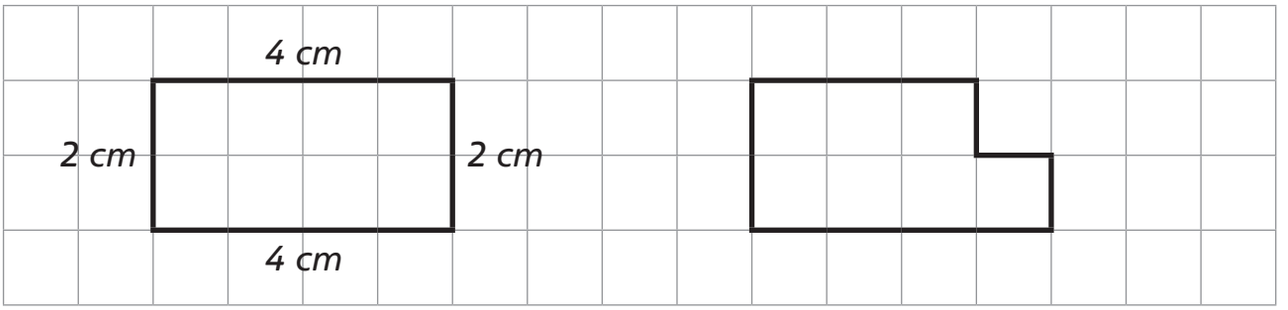
b) _____  _____

_____

_____

_____

8. Each grid square is 1 cm long and 1 cm wide. Write the length of each side. Use the side lengths to find the perimeter.

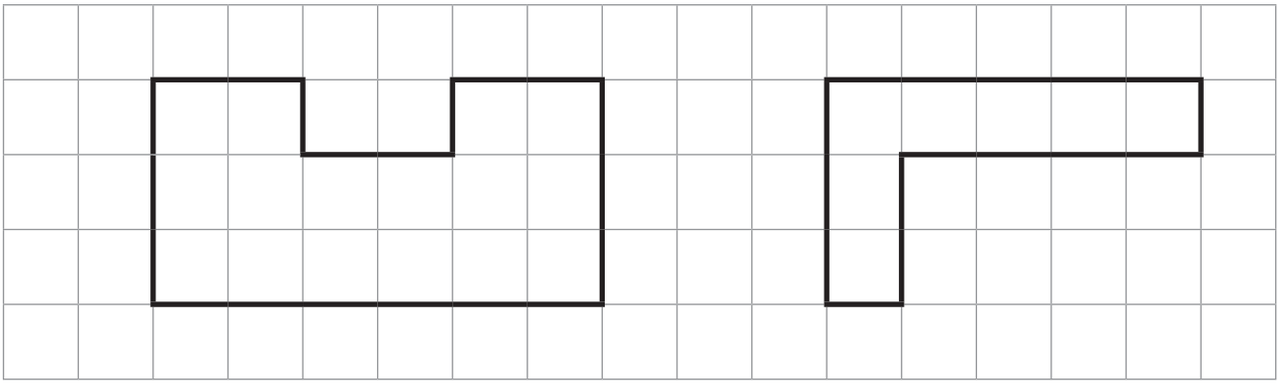


a) Perimeter = $2 + 4 + 4 + 2$

= 12 cm

b) Perimeter = _____

= _____



c) Perimeter = _____

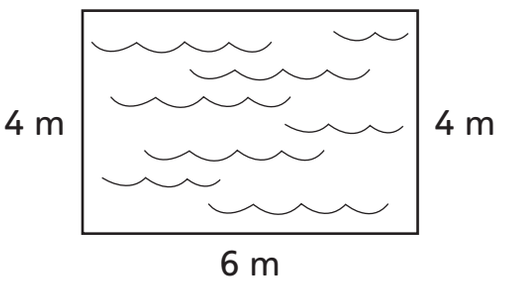
= _____

d) Perimeter = _____

= _____

9. Write an addition sentence for the perimeter of the swimming pool. Then find the perimeter.

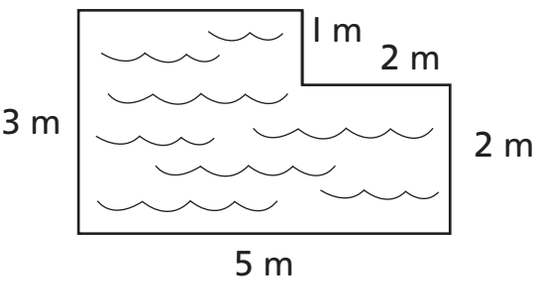
a)



Perimeter = _____

= _____

b)



Perimeter = _____

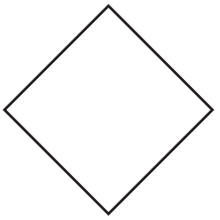
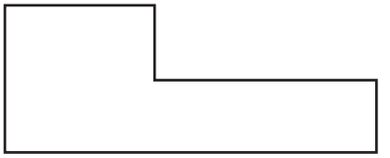
= _____

ME3-8 Exploring Perimeter

1. a) Estimate the lengths of the sides of the shape.

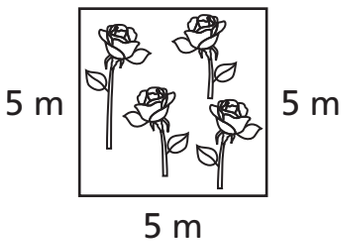
b) Add the lengths to estimate the perimeter of the shape.

c) Measure the sides to the closest centimetre. Find the perimeter.

Shape			
Estimated Perimeter			
Measured Perimeter			

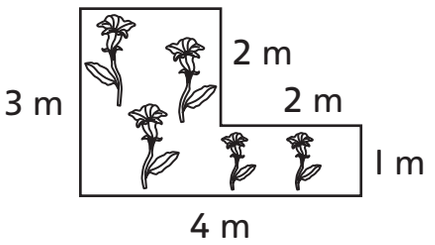
2. a) Find the perimeter of the flowerbeds.

A.



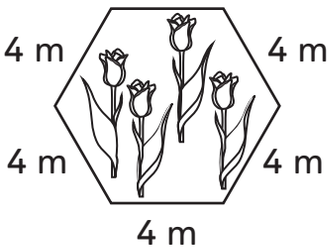
_____

B.



_____

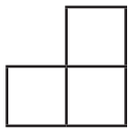
C.



_____

b) Order the flowerbeds from longest perimeter to shortest perimeter. _____

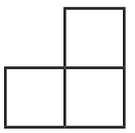
3. a) Perimeter of the shape you see _____



Add one square so that the perimeter of the shape goes up by 2.

New perimeter _____

b) Perimeter of the shape you see _____



Add one square so that the perimeter of the shape stays the same.

New perimeter _____

4. a) All sides of the triangles are 1 unit long. Write the perimeter of each figure in the shape pattern.

_____ _____ _____ _____

b) The perimeters make a number pattern. Describe the number pattern.

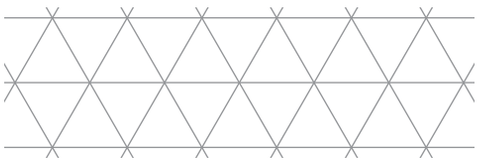
_____

c) Continue the number pattern.

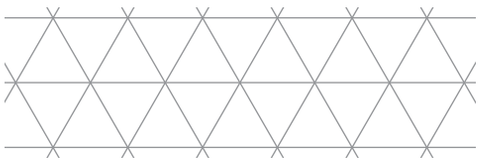
What is the perimeter of the 5th figure? _____

What is the perimeter of the 6th figure? _____

BONUS ▶ Draw the 5th and 6th figures in the shape pattern. Check your answers from part c).

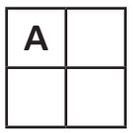


5th figure



6th figure

5. The picture shows two ways to make a rectangle using 4 squares.



a) Which rectangle, A or B, has the smaller perimeter? Explain.

b) Are there other ways to make a rectangle using 4 squares? Show your work.

c) On grid paper, draw two different shapes, rectangles or not rectangles, with a perimeter of 10 units.

6. On grid paper, draw the object with the given perimeter.

a) a square with a perimeter of 8 units

b) a square with a perimeter of 20 units

c) two different rectangles that each have a perimeter of 12 units

7. Ivan makes a poster from 6 squares with 1 m sides. He arranges the squares as shown. He puts a ribbon around the outside of the poster. How much ribbon does he need?