Name :

## LANGUAGE SKILLS

1. Use er or re to finish these words.

| | |
|---|---|
| perimet__ __ | rul__ __ |
| kilomet __ __ | centimet__ __ |
| millimet__ __ | met__ __ |
| measu__ __ | odomet __ __ |

2. Put these words in the table:
ruler, kilometre, millimetre, odometer, builders' tape, centimetre, trundle wheel, dressmakers' tape, metre.

| Unit of measurement | Measuring instrument |
|---|---|
| | |
| | |
| | |
| | |
| | |

3. Match the abbreviation to the word.

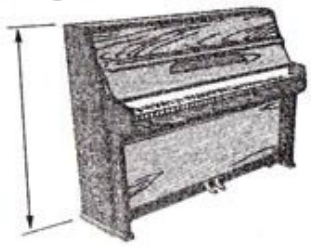
| | |
|---|---|
| cm | metre |
| km | centimetre |
| m | millimetre |
| mm | kilometre |

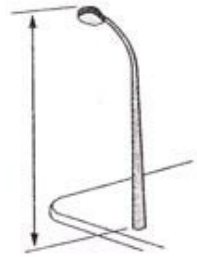
4. Put in the missing letters to make words from this chapter.

| | |
|---|---|
| l __ ngth | pl __ n __ |
| d __ st __nc__ | n __ ar __ st |
| __ ppr __x __ m __tely | __nstr__m__nts |
| c __rc __mf__r__nc__ | __nt__rv__l |
| __st__m__te | w __ dth |

## REVIEW

Which unit of measurement would you use to measure these things.

1.  cm mm km

2.  cm mm m

3.  cm mm m

4. Circle the larger unit of measurement:
millimetre kilometre metre

Change these lengths to mm:

5. 4 cm

6. 2.8 cm

Change these lengths to m:

7. 750 cm

8. 368 cm

Measure these lines:

9. _____ (answer in cm)

10. _____ (answer in mm)

Round these measurements to the nearest cm.

11. _____

12. _____

# Measurement 1 - Unit 7

Lesson 2

**Measure the length of each side in millimetres of figures below and write your answer in the space provided. Hence find the perimeter of each figure**

Fig 1

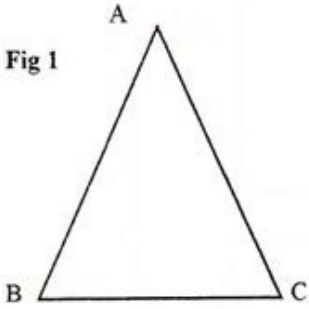
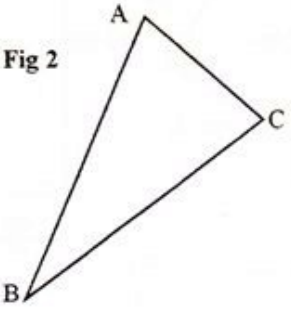


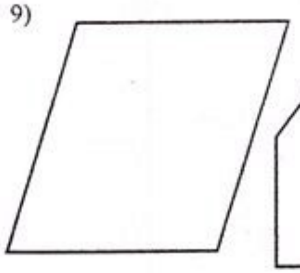

Fig 2



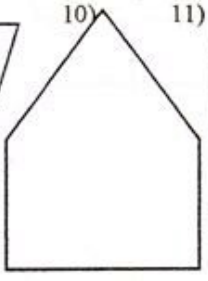

| | Length of AB | Length of BC | Length of AC | Perimeter |
|---|---|---|---|---|
| Fig 1 | 1) | 2) | 3) | 4) |
| Fig 2 | 5) | 6) | 7) | 8) |

**Measure the lengths of the sides of each figure below in millimetres and hence find the perimeter of each**

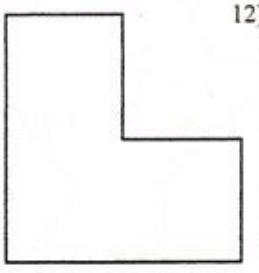
9)



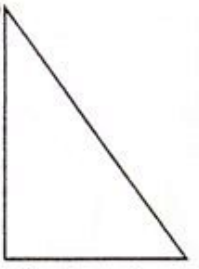
10)



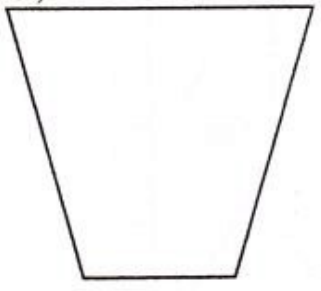
11)



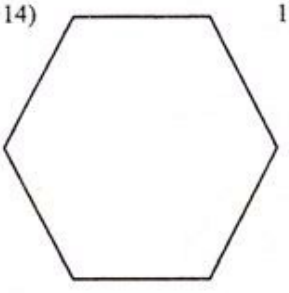
12)



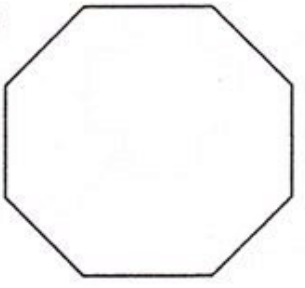
13)



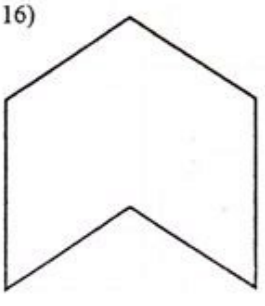
14)



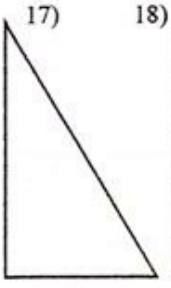
15)



16)



17)



18)

19)

20)

| Answers |
|---|
| 9) |
| 10) |
| 11) |
| 12) |
| 13) |
| 14) |
| 15) |
| 16) |
| 17) |
| 18) |
| 19) |
| 20) |

Mark /20

# 7.2 How long is your stride?

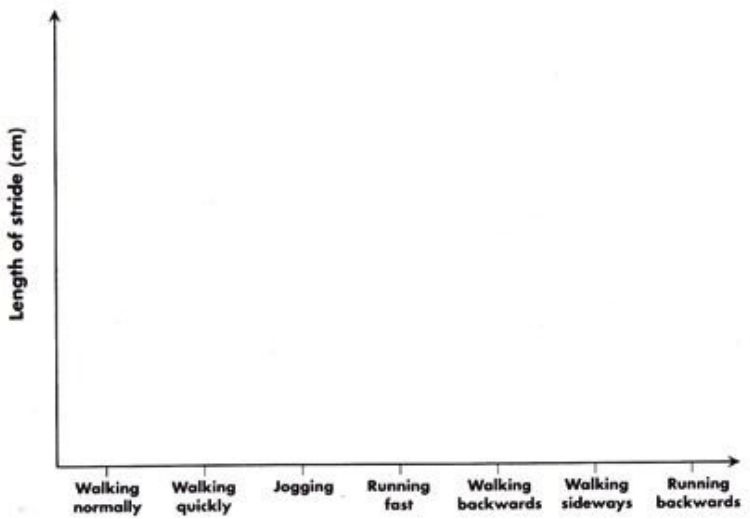
This is an exercise to find out how long your step or stride is in different situations.

For each of the types of movement listed:

**1** Complete ten steps and measure the distance covered. Divide by ten to get the length of your step in centimetres. Write your answer in the table.

| Movement | Length of stride (cm) |
|---|---|
| Walking normally | |
| Walking quickly | |
| Jogging | |
| Running fast | |
| Walking backwards | |
| Walking sideways | |
| Running backwards | |

**2** Graph your results on the axes below.




Comment on your results and then compare your findings to others in your class. What conclusions can you draw?



# 7.3 A piece of string

You will need a piece of string 1 m long, a ruler and 1 centimetre grid paper.

**1** Make a square with your metre of string.
- **a** How long is one of the sides? _____ cm
- **b** What is the area of your square? _____ $cm^2$

**2** Make a rectangle with your metre of string.
- **a** How long are the sides of your rectangle? _____ cm
- **b** What is the area of your rectangle? _____ $cm^2$
- **c** Is this the only rectangle you can make? _____

**3** Make an equilateral triangle with your metre of string.
- **a** How long is each side of your triangle? _____ cm
- **b** What is the area of your triangle? _____ $cm^2$

**4** Make an isosceles triangle with your metre of string.
- **a** What are the lengths of the sides of your triangle? _____ cm
- **b** What is the area of your triangle? _____ $cm^2$
- **c** There is more than one possible isosceles triangle. Find some others and work out their areas. _____
- **d** Which triangle gives the largest area? _____

**5** Make a rhombus with your metre of string.
- **a** How long is each side of your rhombus? _____ cm
- **b** What is the area of your rhombus? _____ $cm^2$
- **c** There is more than one possible rhombus. Find some others and work out their areas. _____
- **d** Which rhombus gives the largest area? _____

**6** Make a regular hexagon with your metre of string.
- **a** How long is each side of your hexagon? _____ cm
- **b** What is the area of your hexagon? _____ $cm^2$

**7** Make a circle with your metre of string.
- **a** What is the diameter of your circle? _____ cm
- **b** Estimate the area of your circle using grid paper. _____ $cm^2$

**8** Compare the areas of the different shapes you have made.
- **a** Which shape has the largest area? _____
- **b** Which shape has the smallest area? _____

**9** All these shapes have the same perimeter.
- **a** List your shapes in order from the largest area to the smallest area.

_____

- **b** What conclusions can you draw from your results about the relationship between perimeter and area?

_____

# 7.1 Measurement problems

## Part A

For each of the following problems:
- discuss possible solutions to each problem;
- record all your attempts at solutions;
- explain how you finally arrived at your solution.

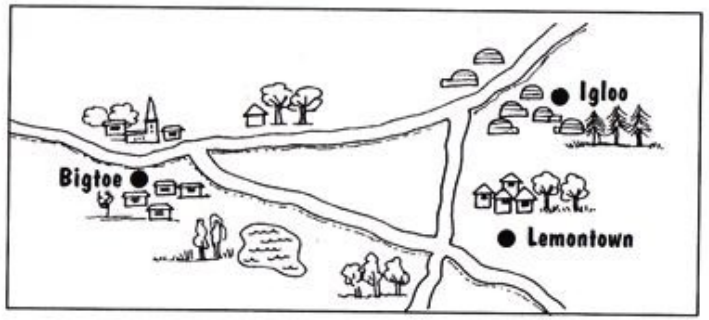
**1** A rectangle has an area of 24 square centimetres.
- **a** What are the possible dimensions of the rectangle?
- **b** How many rectangles have this area?
- **c** Which of these rectangles have the biggest perimeter?
- **d** Which have the smallest?

**2** A piece of string 36 cm long is used to make a rectangle.
- **a** What are the possible dimensions of the rectangle?
- **b** Which of these rectangles have the biggest area?
- **c** Which have the smallest?

**3** If a million people stand in a straight line one behind the other:
- **a** How long would the line be?
- **b** What difference would it make if they stood shoulder to shoulder?

**4** Find the tallest tree in your school.
- **a** Work out possible ways to measure its height.
- **b** Choose a method and find the height of the tree.

**5** A new town, Mathsville, is to be located so that its combined distance from Igloo, Lemontown and Bigtoe is as small as possible. Copy the diagram and show where Mathsville would be.



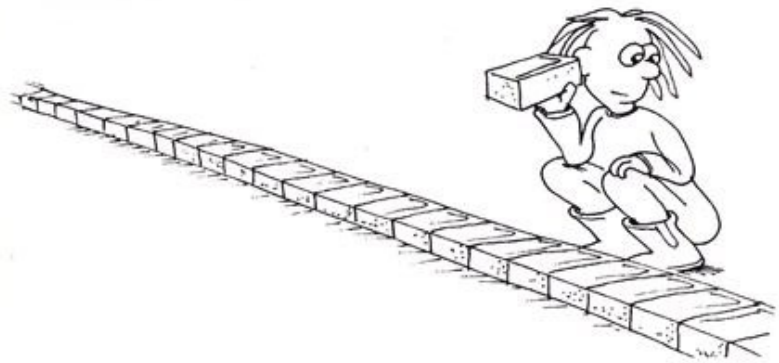





## Part B

The following problems are a little more difficult. You will need to:
- work out what information you need;
- work out how to get the information;
- then go ahead and solve the problem.

**1** If all the bricks used in an average house were laid side by side, how long would the line of bricks be?



**2** What length of wood would be used in building an average house frame?

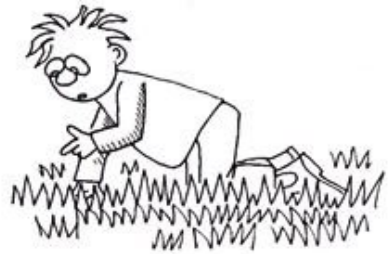
**3** **a** What is the distance covered by a pen when writing in one English class for a Year 7 student?
- **b** What would be the total distance covered by a pen for a whole year in English?

**4** How far would a Rugby League referee or a netball umpire run in the course of a game?

## Group challenge

How many blades of grass in 1 square metre? As a group you should:
- mark out 1 $m^2$ of grass;
- decide how you will count and estimate the blades of grass;
- when you have arrived at an answer, compare it with the answers from the other groups.

Is there one correct answer? Why or why not?

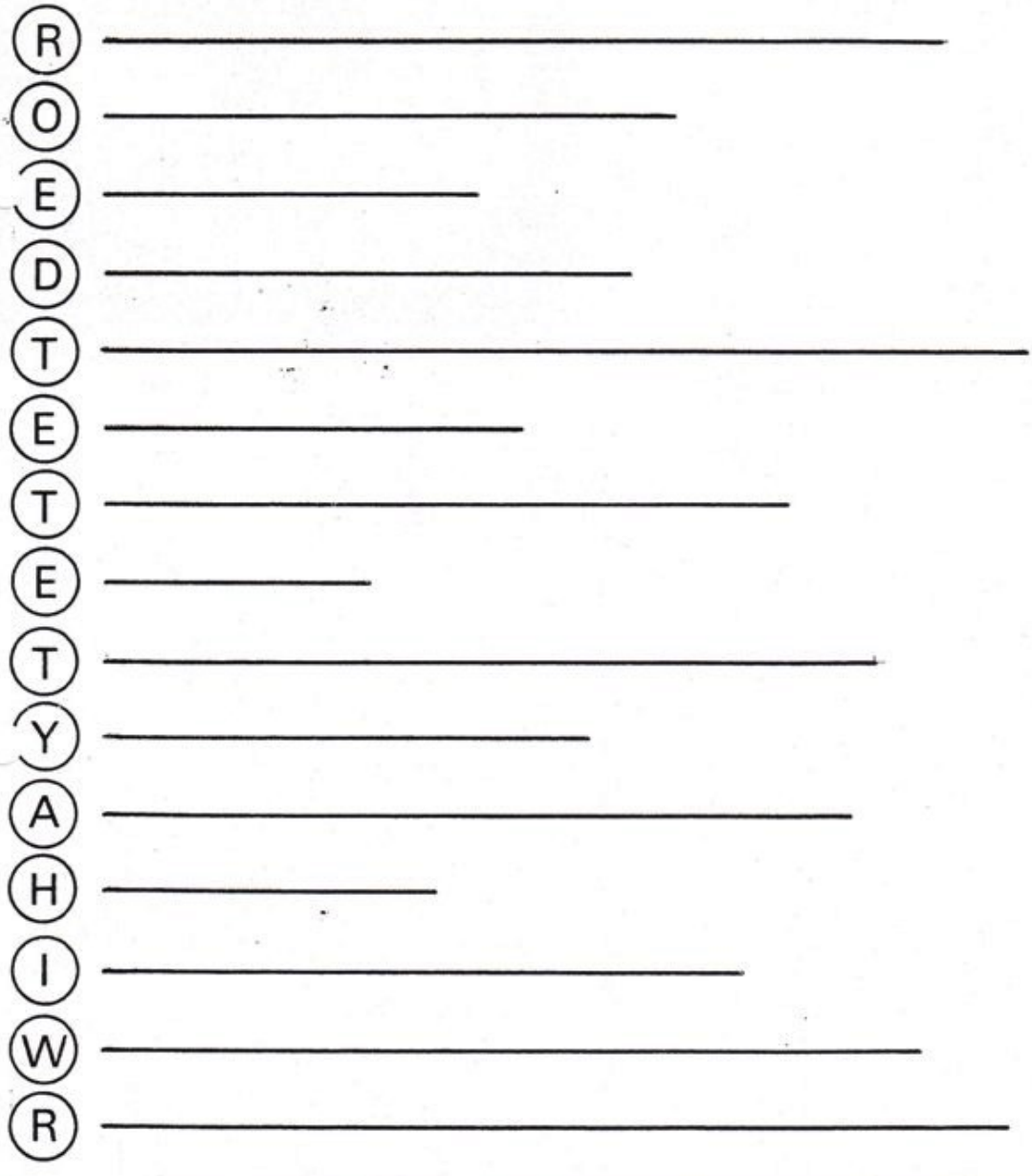


# Why can't bikes stand up by themselves?

TO FIND THE ANSWER TO THIS IMPORTANT QUESTION, FOLLOW THESE DIRECTIONS:

*Measure any line segment below in cm. (to 1 decimal place) Then find your answer in the answer column. The number in front of the answer tells you where to put the letter of the line segment in the row of boxes at the bottom of the page.*

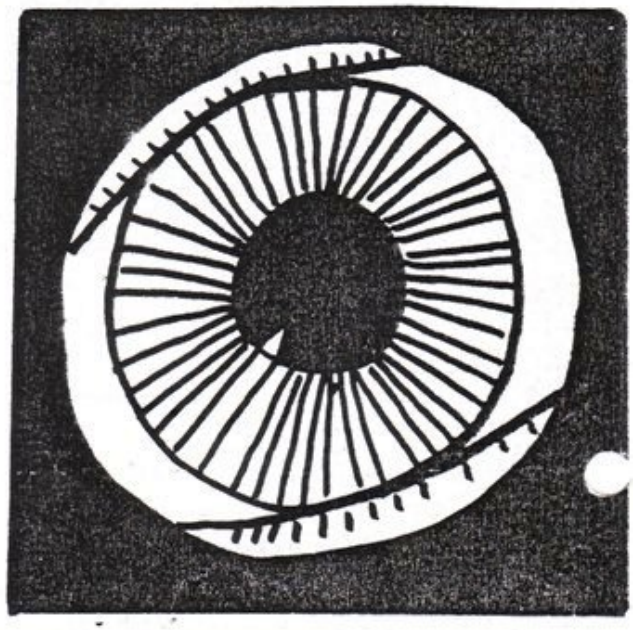
*KEEP WORKING UNTIL YOU DISCOVER THE FOUR-WORD ANSWER.*




| | |
|---|---|
| 1 | 9.8cm |
| 2 | 4.8cm |
| 3 | 5.4cm |
| 4 | 7cm |
| 5 | 10.8cm |
| 6 | 12.1cm |
| 7 | 6cm |
| 8 | 11cm |
| 9 | 11.8cm |
| 10 | 8.2cm |
| 11 | 13.4cm |
| 12 | 9.2cm |
| 13 | 13.1cm |
| 14 | 3.8cm |
| 15 | 7.6cm |

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | |

# What is the Title of This Picture?



CODED TITLE:

79–58–180–75–16–35–180–58–110

35–47–23–11–43–141–23–35–141–58–35

35–11–11–43–141–106–63–75–16–157–106

180–23–47–63–75–35–47–75–86–11

TO DECODE THE TITLE OF THIS PICTURE, FOLLOW THESE DIRECTIONS:

*Measure any line segment below to the nearest millimeter. Express your answer in millimeters, and then find it in the code above. Each time the answer appears in the code, write the letter of that problem above it.*

*KEEP WORKING UNTIL YOU HAVE DECODED THE TITLE. MEASURE WITH PLEASURE!*


U = LENGTH OF $\overline{AB}$ = MM.

A = LENGTH OF $\overline{DF}$ = MM.

H = LENGTH OF $\overline{CG}$ = MM.

D = LENGTH OF $\overline{BE}$ = MM.

N = LENGTH OF $\overline{FH}$ = MM.

E = LENGTH OF $\overline{EF}$ = MM.

F = LENGTH OF $\overline{AD}$ = MM.

C = LENGTH OF $\overline{DE}$ = MM.

G = LENGTH OF $\overline{AG}$ = MM.

P = LENGTH OF $\overline{CF}$ = MM.

T = LENGTH OF $\overline{BG}$ = MM.

R = LENGTH OF $\overline{BD}$ = MM.

I = LENGTH OF $\overline{GH}$ = MM.

M = LENGTH OF $\overline{AH}$ = MM.

O = LENGTH OF $\overline{CE}$ = MM.

S = LENGTH OF $\overline{BC}$ = MM.

# MEASURING LENGTHS

Match each item with the best measuring instrument.

| | |
|---|---|
| 1. photo frame | (a) trundle wheel |
| 2. doorway | (b) ruler |
| 3. house driveway | (c) tape measure |
| 4. distance between towns | (d) odometer |
| 5. netball court | (e) builders' tape |

For each of the intervals in questions 6 to 14:

(a) estimate the length in centimetres

(b) measure the length to the nearest cm

(c) records your results in a table like the one shown

| | Estimate guess | Measurement | Difference |
|---|---|---|---|
| 6 | | | |
| 7 | | | |
| 8 | | | |
| 9 | | | |
| 10 | | | |
| 11 | | | |
| 12 | | | |
| 13 | | | |
| 14 | | | |

TOTAL

6.

7.

8.

9.

10.

11.

12.

13.

14.

Draw line intervals of these lengths.

15. 4 cm
16. 8 cm
17. 5 cm
18. 13 cm
19. 11 cm
20. 9.5 cm ($9\frac{1}{2}$ cm)
21. 2.5 cm
22. 8.5 cm
23. 30 mm (Watch out! These are in millimetres.)
24. 70 mm

15

16.

17

18

19

20

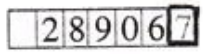
21

22

23

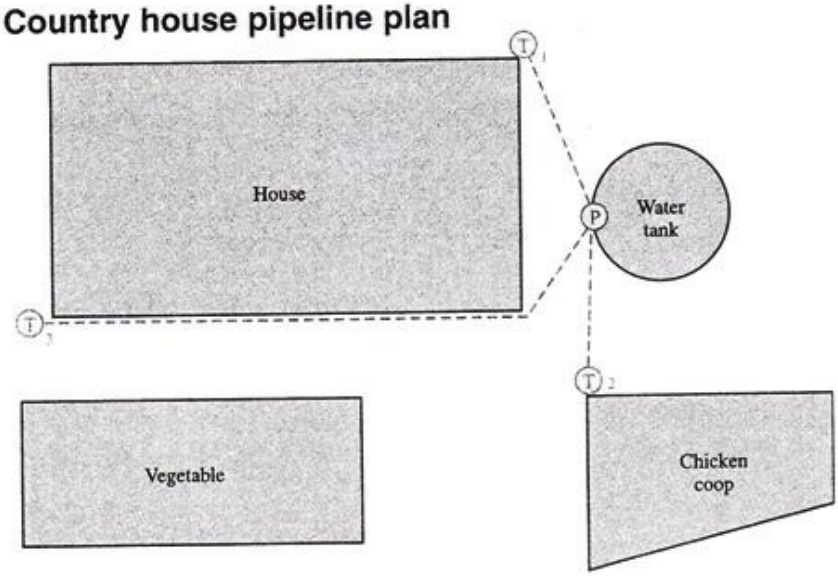
24.

25. Use this car's odometer reading to answer these questions.
The number in ~~blue~~ a box is tenths of a kilometre.




(a) How many whole kms has it travelled?
(b) If it goes another $\frac{3}{10}$ of a km what will the odometer show?

26. **Country house pipeline plan**



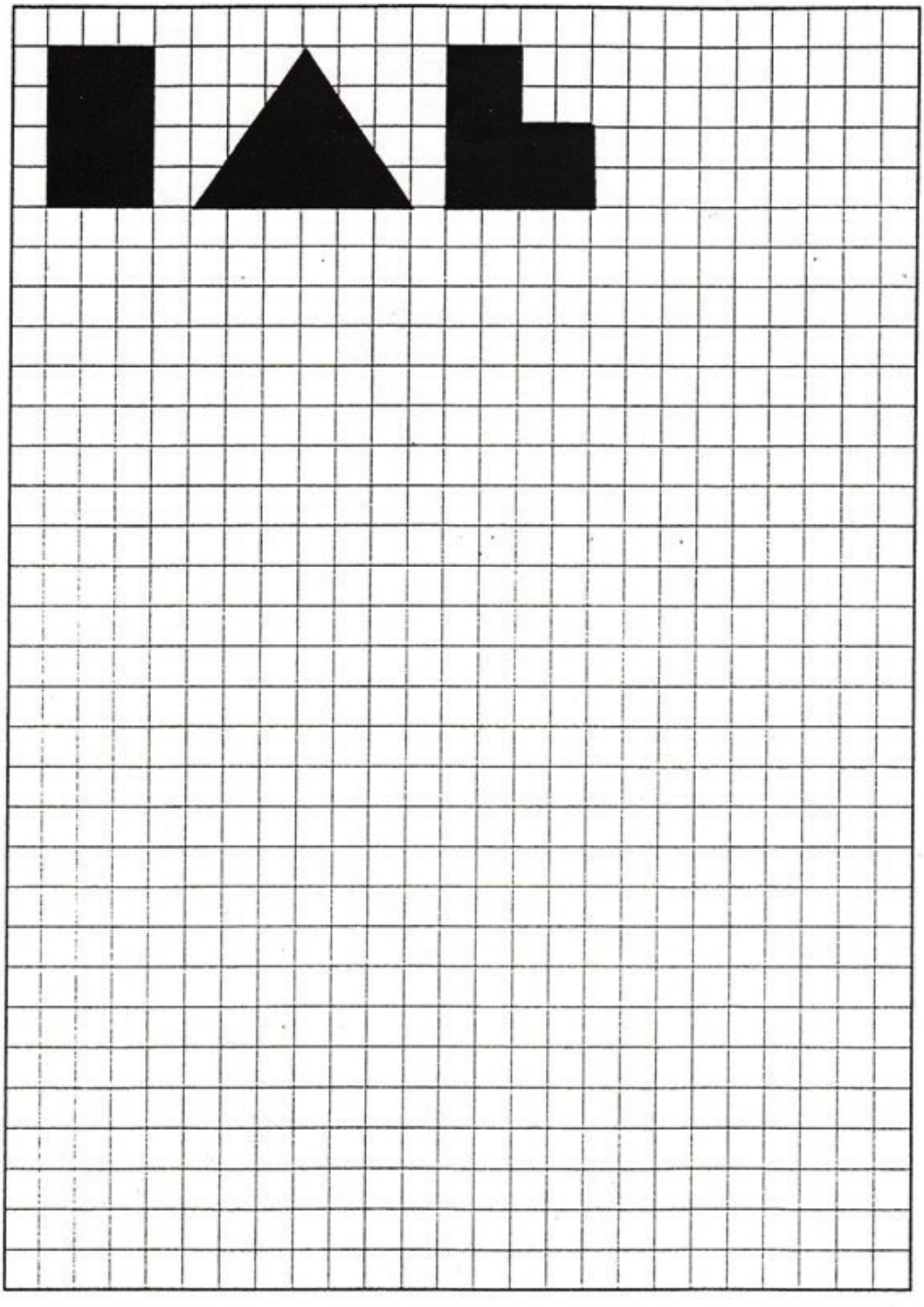

(a) Measure, to the nearest cm, the length of the pipeline from the pump to tap $T_1$.
(b) Measure, to the nearest cm, the length of the pipeline from the pump to tap $T_2$.
(c) Measure, to the nearest cm, the length of the pipeline from the pump to tap $T_3$.
(d) Find the total length, to the nearest cm, of all the pipeline (add the lengths together).
(e) Measure, to the nearest cm, the distance around the outside of the chicken coup.

# Measurement 1 - Unit 7

Lesson 7

## Investigation

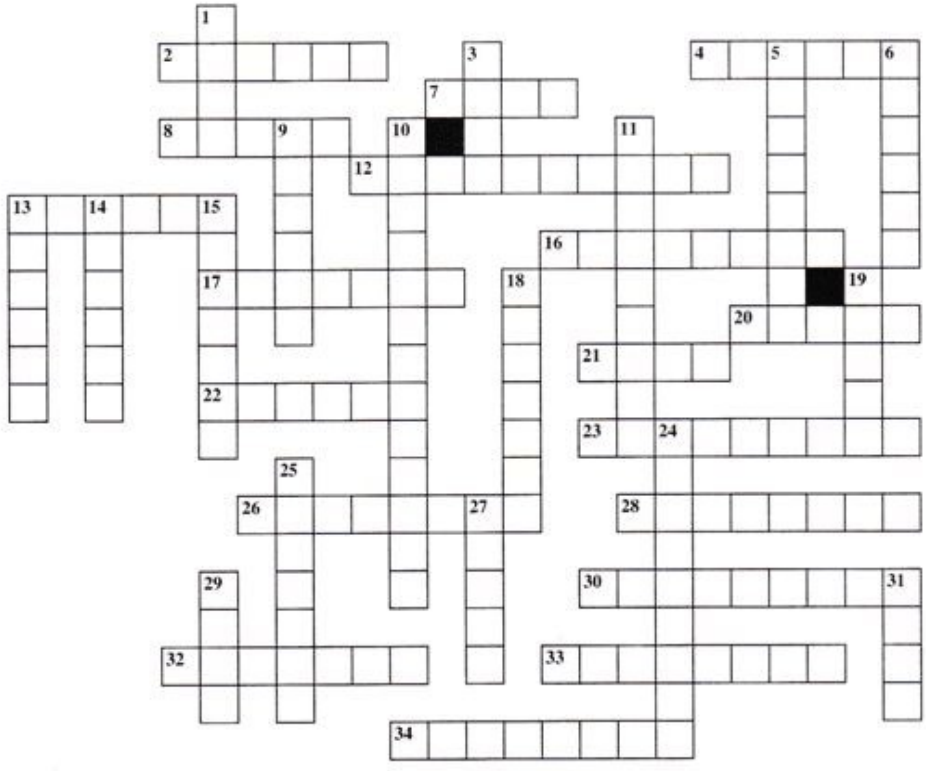
**Shade in as many rectangles , triangles and other shapes as you can that have an area of 12 unit² using the grid below . Three have already been drawn. The shapes should always have their vertices on the grid intersections**



Mark /10

## Worksheet 9-10 Measurement crossword

The answers to this crossword puzzle are listed below in alphabetical order. Arrange them in the correct places.



ACCURACY
AREA
BASE
BREADTH
CAPACITY
CENTURY
CIRCLE
CIRCUMFERENCE
COMPOSITE
DIAGONAL
DIAMETER
DIMENSIONS
ERROR
ESTIMATE
FACE
HECTARE
HOUR
KITE
LENGTH
LIMITS
LITRE
MASS
METRIC
PERIMETER
PRISM
RADIUS
RECTANGLE
RHOMBUS
SECTOR
SQUARE
SURFACE
TONNE
TRAPEZIUM
TRIANGLE
VOLUME