

# MATHEMATICS TEST

## Year 9 – Part C

This part of the test contains two major problems which you have 80 minutes to solve.

It is very important that you clearly show how you have solved the problems.

At the start of each problem you will find a square with a description regarding what your teacher will take into account when assessing your work.

*All calculations and answers should be written on paper that is handed in at the end of the test.*

*The test packet must be handed in with your solutions.*

You may use calculator and ruler.

Name: \_\_\_\_\_

School: \_\_\_\_\_ Class: \_\_\_\_\_

Date of birth: Year \_\_\_\_\_ Month \_\_\_\_\_

Day \_\_\_\_\_

Girl ☐ Boy ☐

# Problem1 – Article

Your teacher will take into account the following when assessing your work

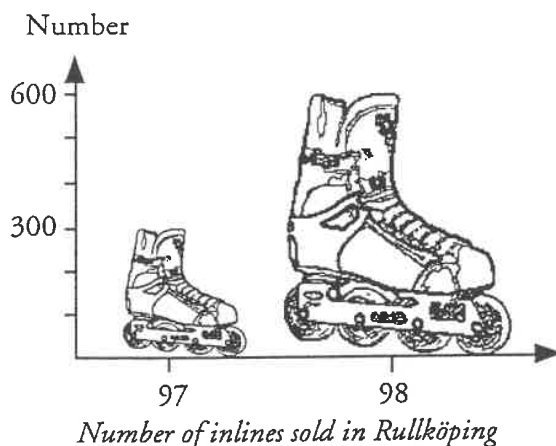
- what mathematical skills you have shown
- how well you explain your work and give reason for your answers.

The following article has been written by the journalist M Edia about a recent craze in Rullköping.

- What mistakes can you discover in the article, ie in the text and the diagrams?
- Correct any mistakes found.
- Try to explain the mathematical errors that are made in the article.

## Wheeling in Rullköping

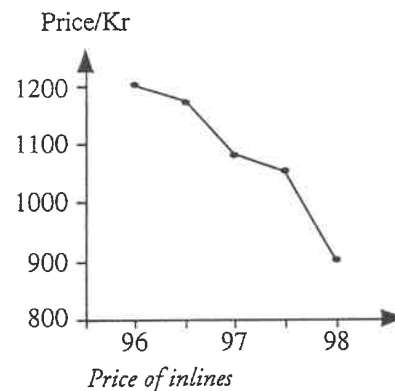
Rullköping will never be the same again. No-one can walk safely about town, not even on the pavements. The reason is the increased number of inline-users. Inline sales in Rullköping have increased by 200 per cent in the past year. At the same time the



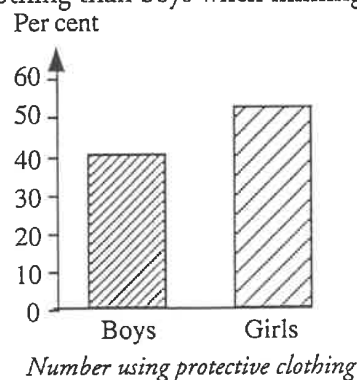
price for a pair on inlines has fallen 33 per cent of what it was two years ago.

All this has had a dramatic effect on the streets of Rullköping and made the older generation feel "steamrollered".

What is probably a more serious problem is that the number of accidents has increased. The number of broken wrists has, for example, risen from 10 to 25 a month, which is 60 per cent, says Gunilla Plåstersson, nurse at the Rullköping Health Centre.



In an effort to reduce the number of accidents the health centre has started an information campaign showing the importance of using protective clothing when inlining, something far too few youngsters do today especially boys. Girls are 12 % more likely to use protective clothing than boys when inlining.



By M EDIA

## Problem 2 – Assembly halls

Your teacher will take into account the following when assessing your work

- what mathematical skills you have shown
- how well you explain your work
- which descriptions and conclusions you have reached.

- I In the new school there will be an assembly hall where the first row has 10 seats and the second row has 13 seats. Row 3 will have 16 seats and after this each row will increase with 3 seats until the back row which has 31 seats.
- a) How many seats will row 6 have?
  - b) How many rows will there be in the hall?
  - c) Describe in words or by using a formula how to work out the number of seats in row  $n$ .
- II In another assembly hall the number of seats in row  $n$  can be worked out using the formula  
 $12 + 5n$ .  
Explain how this hall is arranged.
- III Kalle claims that it is possible to work out the total number of seats in an assembly hall, similarly arranged, by multiplying the number of seats in the middle row by the total number of rows.  
Investigate if Kalle is right.

