

Part B2

The contents of this test paper must remain *confidential* until June 30, 2007.

This part consists of questions you may work with for about 50 minutes.

It is very important that you carefully explain the reasoning in your solution.

In the box below the question you can see what considerations the teacher will apply in assessing your work. At the most the question can yield 4 g-points and 6 vg-points. The symbol  $\boxtimes$  indicates that you may demonstrate MVG-qualities in your solution.

Aids: Calculator and formula sheet.

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

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

Birth date: Year \_\_\_\_\_ Month \_\_\_\_\_ Day \_\_\_\_\_

Female  Male

*Solutions and answers must be written on separate paper, not on this question paper. The question paper must be handed in, together with your solution.*

## Finding a pattern with three consecutive numbers

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Choose three whole numbers that follow directly after each other, e.g. 6, 7, 8

Multiply the largest and the smallest one:  $6 \cdot 8 = 48$

Multiply the middle number by itself:  $7 \cdot 7 = 49$

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- Make these calculations for *several different* sequences of three other numbers that follow directly after one another. Describe the result of your investigation. What conclusion can you make?
- Investigate in *the same manner* some other sequences with three numbers. The difference between two successive numbers in the sequence must be the same, e.g. *two* like in the sequences 1, 3, 5 and 6, 8, 10 or *three* like in the sequences 1, 4, 7 and 6, 9, 12. Describe the result of your investigation. What relationship can you find?
- Show that this relationship holds for all sequences set up in this way.

(4/6) ✕

***In assessing your work, the teacher will consider***

- what methods you choose and how well you know how to use them
- how well you present your solutions and carry out your calculations
- how well you explain your reasoning and conclusions.