

# Mathematics

## Delprov C

1c

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Elevens namn och klass/grupp

# Instructions – part C

**Time for the test** 60 minutes for part C.

**Aids** Allowed aids on part C are digital devices, formula sheet and ruler.

**Tasks** This part consists of one large task. The solution is to be written on separate paper, which is to be submitted together with the test booklet. In your work it is required of you to

- show your solutions
- explain and motivate your thinking.

**Grading limits** The test (part A–D) gives a total maximum of 87 points.

Limit for test grade

E: At least 19 points.

D: At least 32 points of which at least 12 points at level C or higher.

C: At least 43 points of which at least 22 points at level C or higher.

B: At least 55 points of which at least 7 points at level A.

A: At least 66 points of which at least 13 points at level A.

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

Date of birth: \_\_\_\_\_

Programme: \_\_\_\_\_ Class: \_\_\_\_\_

**Also write your name, date of birth, programme and class on the sheets you hand in.**

Illustrations: Jens Ahlbom

## 16. The Azaloo dice game

(4/4/4)



In a dice game called Azaloo, you throw two six-sided dice simultaneously.

If the dice show different number of dots, you get as many points as the number of dots on the die with the least number of dots.

If the dice show the same number of dots, you lose points equal to the number of dots shown on both dice put together.

Here are some examples of what the dice can show when thrown, and the points each outcome will give.



The throw gives +1 point, as the die showing the least number of dots shows one dot.



The throw gives +3 points, as the die showing the least number of dots shows three dots.



The throw gives -8 points, as the dice show the same number of dots and they show eight dots put together.

- I. What is the probability of getting -8 points from a throw?
- II. What is the probability of getting minus points from a throw?
- III. What is the probability of getting exactly +1 point from a throw?

In the game of Azaloo, you repeatedly throw the two dice simultaneously and add the results from each throw.

- IV. What is the probability of having a total of +10 points after two throws?
- V. Investigate what happens to the total score if you make a large number of throws over a longer period and add the results from each throw.



