



Mathematics: applications and interpretation

Higher level

Paper 1

15 May 2025

Zone A afternoon | Zone B afternoon | Zone C afternoon

Candidate session number

2 hours

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Instructions to candidates

- Write your session number in the boxes above.
- Do not open this examination paper until instructed to do so.
- A graphic display calculator is required for this paper.
- Answer all questions.
- Answers must be written within the answer boxes provided.
- Unless otherwise stated in the question, all numerical answers should be given exactly or correct to three significant figures.
- A clean copy of the **mathematics: applications and interpretation HL formula booklet** is required for this paper.
- The maximum mark for this examination paper is **[110 marks]**.

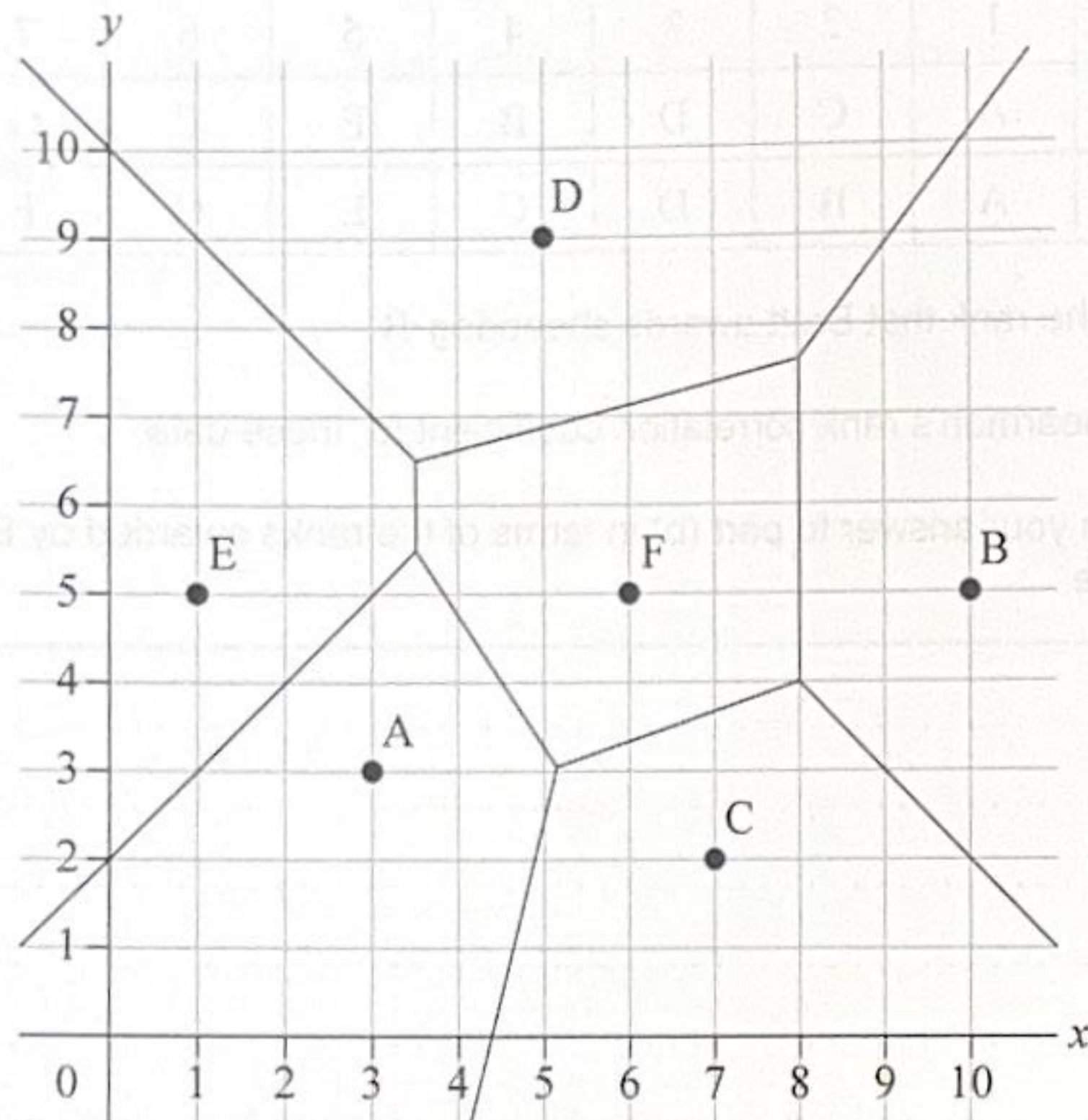
062

A002



4. [Maximum mark: 7]

Consider the Voronoi diagram which shows the sites $A(3, 3)$, $B(10, 5)$, $C(7, 2)$, $D(5, 9)$, $E(1, 5)$ and $F(6, 5)$. The diagram also shows the cells formed by each site and their boundaries.



Vertex X is equidistant from sites B , C and F .

- (a) (i) Write down the coordinates of X .
- (ii) The exact value of BX is \sqrt{n} . Write down the value of n . [2]

Vertex $Y(a, b)$ is equidistant from sites B , D and F .

- (b) (i) Write down the value of a .
- (ii) Find the exact value of b . [5]

(This question continues on the following page)

(Question 4 continued)

A large rectangular area containing horizontal dotted lines for writing answers to the questions on page 7.

