NSW Education Standards Authority

2022 **HIGHER SCHOOL CERTIFICATE EXAMINATION**

# Mathematics Extension 1

**General Instructions**
* Reading time -- 10 minutes
* Working time -- 2 hours
* Write using black pen
* Calculators approved by NESA may be used
* A reference sheet is provided at the back of this paper
* For questions in Section II, show relevant mathematical reasoning and/or calculations
* Write your Centre Number and Student Number on the Question 12 Writing Booklet attached

**Total marks: 70**

**Section I -- 10 marks** (pages 2-6)
* Attempt Questions 1-10
* Allow about 15 minutes for this section

**Section II -- 60 marks** (pages 2-6)
* Attempt Questions 11-14
* Allow about 1 hour and 45 minutes for this section

# Section I

**10 marks**
**Attempt Questions 1--10**
**Allow about 15 minutes for this section**

Use the multiple-choice answer sheet for Questions 1--10.

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**1**     Given that $\overrightarrow{OP} = (-3, 1)$ and $\overrightarrow{OQ} = (2, 5)$, what is $\overrightarrow{PQ}$?

A. $(1, -6)$

B. $(-1, 6)$

C. $(5, 4)$

D. $(-5, -4)$