NSW Education Standards Authority

2022 **HIGHER SCHOOL CERTIFICATE EXAMINATION**

Mathematics Extension 1

General Instructions

* Reading time -- 6 minutes
* Working time -- 67 minutes
* 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 all Writing Booklets attached

Total marks:
40

Section I -- 6 marks

* Attempt Questions 1-6
* Allow about 6 minutes for this section

Section II -- 34 marks

* Attempt Questions 7-9
* Allow about 61 minutes for this section

Section I

6 marks
Attempt Questions 1--6
Allow about 6 minutes for this section

Use the multiple-choice answer sheet for Questions 1--6.

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1. For what values of n are (-3n + 3, -1) and (-n - 2, 3) parallel?

(A) -2

(B) -3

(C) -5

(D) 1

2. For what values of n are (-4n - 3, 2) and (3n - 4, -2) parallel?

(A) -1

(B) 1

(C) 2

(D) 4

3. The polynomial $x^3 - 8x^2 + 19x - 12$ does not have a root at which value of x?

(A) 3

(B) 4

(C) 1

(D) -3

4. The polynomial $x^3 - 7x - 6$ does not have a root at which value of x?

(A) 3

(B) -1

(C) -2

(D) 1

5. For what values of n are (n - 2, -1) and (-n - 4, -4) parallel?

(A) -1

(B) -4

(C) 1

(D) 2

6. For what values of n are (2n - 4, 2) and (3n + 4, -4) parallel?

(A) 2

(B) 3

(C) 5

(D) 6