NSW Education Standards Authority

2022 **HIGHER SCHOOL CERTIFICATE EXAMINATION**

Mathematics Extension 1

General Instructions

* Reading time -- 25 minutes
* Working time -- 300 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: 175

Section I -- 25 marks

* Attempt Questions 1-25
* Allow about 25 minutes for this section

Section II -- 150 marks

* Attempt Questions 26-30
* Allow about 275 minutes for this section

Section I

25 marks
Attempt Questions 1--25
Allow about 25 minutes for this section

Use the multiple-choice answer sheet for Questions 1--25.

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1. For what values of n are (0n - 2, 3) and (-n + 4, -1) parallel?

(A) -1

(B) 2

(C) 4

(D) 5

2. For what values of n are (n - 2, -1) and (3n - 3, -4) parallel?

(A) 0

(B) 1

(C) 2

(D) 4

3. For what values of n are (3n - 2, 2) and (0n + 3, -4) parallel?

(A) -1

(B) -3

(C) -5

(D) 0

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

(A) -1

(B) -2

(C) -3

(D) 0

5. For what values of n are (0n + 3, 2) and (-2n - 1, 2) parallel?

(A) -1

(B) 0

(C) 1

(D) 4

6. For what values of n are (3n + 4, 2) and (0n + 3, 1) parallel?

(A) -1

(B) -3

(C) -4

(D) -6

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

(A) -2

(B) -3

(C) -4

(D) -7

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

(A) -1

(B) -2

(C) -4

(D) -5

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

(A) -1

(B) -2

(C) -3

(D) 0

10. For what values of n are (4n + 1, 3) and (-2n - 1, -3) parallel?

(A) -1

(B) 1

(C) 3

(D) 4

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

(A) -1

(B) -3

(C) -4

(D) -6

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

(A) 0

(B) 3

(C) 4

(D) 5

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

(A) 1

(B) 2

(C) 3

(D) 5

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

(A) 2

(B) 3

(C) 4

(D) 5

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

(A) -3

(B) -5

(C) -6

(D) 0

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

(A) -1

(B) -2

(C) -3

(D) 0

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

(A) 0

(B) 2

(C) 3

(D) 4

18. For what values of n are (2n + 1, 4) and (3n - 4, 1) parallel?

(A) -1

(B) -3

(C) -4

(D) 2

19. For what values of n are (3n - 1, -1) and (-n - 2, -4) parallel?

(A) -1

(B) -2

(C) -3

(D) -4

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

(A) -1

(B) 0

(C) 1

(D) 4

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

(A) -2

(B) -3

(C) -6

(D) 0

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

(A) 1

(B) 3

(C) 4

(D) 5

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

(A) 0

(B) 2

(C) 4

(D) 5

24. For what values of n are (0n + 2, -2) and (-n - 3, -3) parallel?

(A) 1

(B) 2

(C) 3

(D) 4

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

(A) -2

(B) -3

(C) -4

(D) -7