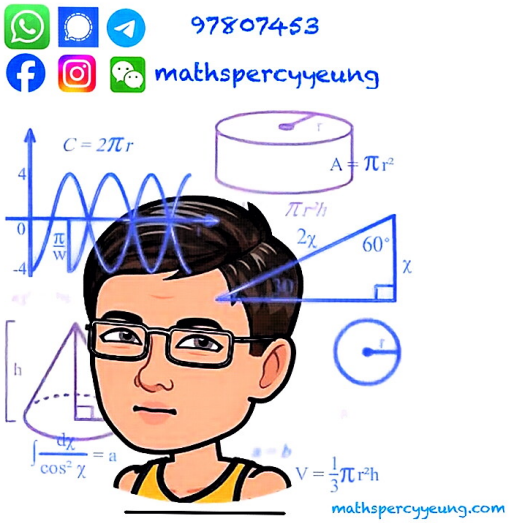
Mid-year Examination 2025 – 2026

Form 1

177 students

Mathematics
Time Allowed : 1 hour
Question/Answer Paper



Please read the following instructions very carefully.

1. This paper consists of TWO sections, A and B.

2. Write your class, class number, name and division in the spaces provided on this cover.

3. This paper carries 100 marks. Attempt ALL questions in this paper. Write your answers in the spaces provided in this Question/Answer Paper.

4. The diagrams in this paper are not necessarily drawn to scale.

For Markers' Use Only	
1 – 25.	(58)
26.	(3)
27.	(3)
28.	(6)
29.	(6)
30.	(6)
31.	(5)
32.	(7)
33.	(6)
TOTAL	(100)

Section A (58%)

All rough work should be done on the rough work paper provided, but will not be marked.

		Answers	Marks
1.	Express 504 as a product of prime factors using index notation.	1. _____	2
2.	Find the H.C.F. of $2^2\times3^4\times5\times11$ and $3^2\times5^3\times7^2$.	2. _____	2
3.	Evaluate $4-\dfrac{18-39}{6-(-1)}$.	3. _____	2
4.	Represent the following word phrases by algebraic expressions. (a) Add the cube of y to x and then multiply the sum by 4. (b) Divide the square of a by the product of b and 5.	4. (a) _____ (b) _____	 2 2
5.	Simplify the following algebraic expressions. (a) $4m\times3-36m\div2$ (b) $-6(x-2y)+(-4y+x)$	5. (a) _____ (b) _____	 2 2
6.	Consider the formula $A=\dfrac{1-b}{c+b}$. Find the value of A if $b=-\dfrac{1}{2}$ and $c=\dfrac{1}{3}$.	6. _____	2
7.	Consider the formula $A=\dfrac{x^2-y}{(x+y)^2}$. If $x=-3$ and $y=-6$, find the value of A.	7. _____ _____	2
8.	Solve the following equations. (a) $2a=\dfrac{10a-16}{4}$ (b) $15b-3(3b-4)=36$	8. (a) $a=$ _____ (b) $b=$ _____	 2 2
9.	If 785♥ is a 4-digit number which is divisible by 4, find all the possible values of ♥.	9. _____	2
		Subtotal:	**/24**

10. Find the sum of $\frac{3}{8}$ of a round angle and $1\frac{2}{5}$ of a right angle. Express your answer in degrees.

10. _____ 2

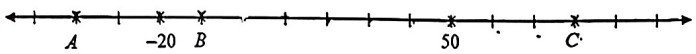
11. What percentage of 260 is 117?

11. _____ 2

12. How many integers are there between -13.27 and 5.95?

12. _____ _____ 2

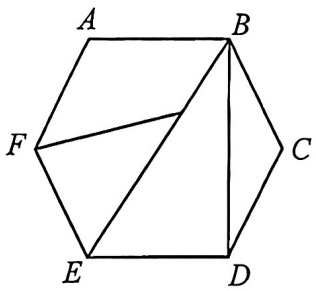
13. The figure shows the positions of three numbers A, B and C on a number line.



Find the value of $-(A-B-C)$.

13. _____ 2

14. In the figure, $ABCDEF$ is a regular hexagon. Name an isosceles triangle.



14. _____ 1

15. There are 450 students in a group. 64% of them have siblings.

15.

(a) How many students have siblings?

(a) _____ 2

(b) How many students do not have siblings?

(b) _____ 1

16. In the figure, the 1st pattern consists of 3 dots. For any positive integer n, the $(n+1)^{th}$ pattern is formed by adding $(2n+1)$ dots to the nth pattern. Find the number of dots in the 6th pattern.

1st pattern 2nd pattern 3rd pattern

16. _____ _____ 2

Subtotal: /14

17.	Winnie bought n dozen pieces of eakes. After eating 2 pieces of them, the remaining cakes were equally shared among k students. Find the number of pieces of cakes that each student could get in terms of n and k.	17. _____	2
18.	Alice plans to fence a farmland with fences of equal length of x cm. If 14 fences are used, 72 cm of the border will remain unfenced. If 17 fences are used, there will be an excess of 63 cm. Find the value of x.	18. _____	2
19.	The total price of 50 cups is \$3750. Each of them is sold at either \$60 or \$85. Find the number of cups that are sold at \$85 each.	19. _____ _____	2
20.	Cathy buys a pair of sunglasses for \$95. She sells it to Kimberley at a profit of 20%. What is the selling price of the sunglasses?	20. _____	2
21.	If m% of 300 cm is 0.45 m, find the value of m.	21. _____	2
22	If the length of the rectangle is increased by 25% and the width of the rectangle is decreased by 40%, find the percentage change in its area.	22. _____	2
23.	Kelly bought a mobile phone for \$$C$ and then sold it for \$2500. If the percentage loss is 37.5%, find the value of C.	23. _____	2
24.	If a calculator is sold at the marked price, then the percentage profit is 40%. If the calculator is sold at a 10% discount on its marked price, then the profit is \$46.8. Find the cost of the calculator.	24. _____	3
25.	Two cars, A and B, travel along a straight north-south road. Assume that a positive number represents a distance travelled due north. Initially, cars A and B are 100 m apart, with car A located north of car B. After one minute, car A has travelled −760 m, and car B has travelled +1000 m. Find the distance between cars A and B now.	25. _____	3

Subtotal: /20

Section B (42%)

All working must be clearly shown in the spaces provided.

26. Simplify $3a \times 8 + 5 - 6a \div 2 - 10$. (3 marks)

27. Joey has $2m$ \$2.8 stamps and $\frac{n}{2}$ \$4 stamps. Suppose the total value of the stamps is \$$V$.

(a) Write down the formula for V. (1 mark)

(b) If $m = 10$ and $n = 16$, find the total value of the stamps. (2 marks)

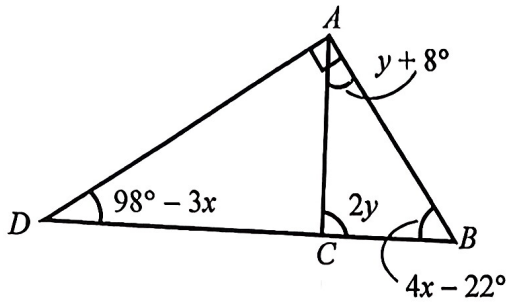
28. The general term T_n of a sequence is $3-4n$.

(a) Find T_5. (1 mark)

(b) If $T_k = -69$, find the value of k. (2 marks)

(c) If $3T_5 + 2T_{m+1} + 221 = 0$, find the value of m. (3 marks)

29. In the figure, BCD is a straight line.



(a) Find the value of x. (3 marks)

(b) Is $\angle ACB$ an acute angle? Explain your answer. (3 marks)

30. The following table shows the possible marks obtained for each question in a test.

Each question	Answered correctly	Answered wrongly	Not answered
Mark(s)	+3	–2	–1

There are 10 questions in the test. Cindy got 5 correct answers and 3 wrong answers in the test.

(a) Find the test score Cindy got. (3 marks)

(b) It is given that James got 4 correct answers only in the same test. Is it possible that the test score of James is greater than that of Cindy? Explain your answer. (3 marks)

31. A box contains 40 marbles of which 30% are white and other rest are either blue or red.

(a) If there are 15 blue marbles in the box, find the percentage of marbles that are red. (3 marks)

(b) Someone claims that if 4 red marbles are removed from the box, the number of blue marbles will be 65% more than the number of red marbles. Do you agree? Explain your answer. (2 marks)

32. Sally bought 40 shirts at \$50 each and 55 dresses at \$200 each.

(a) If she wants to sell all the shirts and dresses at a profit of 30% and at a profit of 50% respectively. Find the marked prices of a shirt and a dress respectively. (3 marks)

(b) If Sally sells all the shirts and dresses at the marked prices in (a), find the total profit she can make. (2 marks)

(c) Sally sold all 40 shirts but $\frac{3}{5}$ of the dresses could not be sold.

Suppose she sells the remaining dresses at a discount of 70% on the marked price in (a). Will she make an overall profit or loss? Explain your answer. (2 marks)

33. A box contains several product A, product B and product C. It is given that the number of product A is 4 times the number of product B, and the number of product C is 20 less than 5 times the number of product A. Suppose the number of product A in the box is x.

(a) Express, in terms of x,

(i) the number of product B in the box, (1 mark)

(ii) the number of product C in the box. (1 mark)

(b) The weight of product A, product B and product C are 120 g, 41 g and 55 g respectively. If the total weight of product A and product B in the box is 3126 g, find the total weight of all products in the box. (4 marks)

--- End of Paper ---