2022-2023 First Term Form Test

F. 1 Mathematics

Class : _____ Name : _____ Class Number : _____

Time allowed : 45 minutes

Full mark : 45

This question-answer book consists of 8 printed pages.

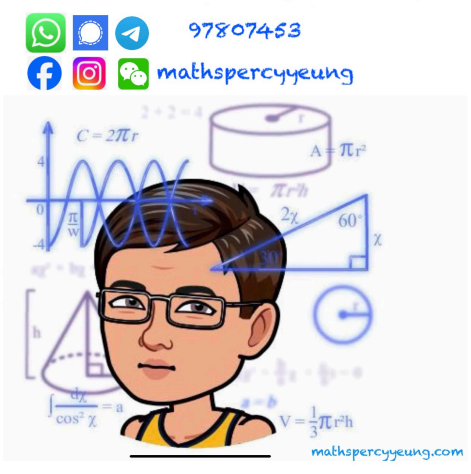
Instructions to candidates:

1. This paper must be answered in English with a blue / black ball pen, unless otherwise specified.
2. Write your name, class and class number in the space provided on this cover.
3. This paper consists of TWO sections, A and B.
   Section A carries 20 marks and Section B carries 25 marks.
4. Answer ALL questions in this paper. Write your answers in the spaces provided in this Question-Answer Book. Do not write in the margins. Answers written in the margins will not be marked.
5. Mark the answers for Section A on page 4 with an HB pencil as follows:

CORRECT:	INCORRECT:
23. ▭ ▬ ▭ ▭	23. ▭ ▭ ▭ ▭
	23. ▭ ▭ ▭ ▭

   Wrong marks should be completely erased with a clean rubber.

   Choose the best answer for each question. All questions carry equal marks in Section A.
6. All diagrams / graphs / charts as part of the answers must be clearly drawn with an HB pencil.
7. Graph paper and supplementary answer sheets will be supplied on request. Write your name, class and class number on each sheet, and fasten them INSIDE this book.
8. Unless otherwise specified, all working must be clearly shown in Section B.
9. The diagrams in this paper are not necessarily drawn to scale.
10. Unless otherwise specified, numerical answers must be exact.
11. Use of calculators is **not** allowed in this examination.



Section A (20 marks)

1. When 153 is divided by 3 and the quotient is then subtracted from 42, the result is

   A. 9.

   B. 11.

   C. −9.

   D. −11.

2. Arrange $\frac{17}{3}, -\frac{3}{5}, -\frac{11}{4}, 5.4$ in descending order of value.

   A. $\frac{17}{3} > 5.4 > -\frac{3}{5} > -\frac{11}{4}$

   B. $\frac{17}{3} > 5.4 > -\frac{11}{4} > -\frac{3}{5}$

   C. $-\frac{11}{4} < -\frac{3}{5} < 5.4 < \frac{17}{3}$

   D. $-\frac{3}{5} < -\frac{11}{4} < \frac{17}{3} < 5.4$

3. Which of the following is/are divisible by both 6 and 8?

   I. 254 360

   II. 3 103 992

   III. 5 430 591

   A. I only

   B. II only

   C. I and III only

   D. II and III only

4. Present the word phrase 'multiply the sum of a and b by the difference of y subtracted from x squared' by an algebraic expression.

   A. $a+b(y-2x)$

   B. $(a+b)(y-x^2)$

   C. $(a+b)(x^2-y)$

   D. $(a+b)(2x-y)$

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5. Consider the formula $t=\frac{(a-b)^2}{c-b}$. Find the value of t when $a=-10$, $b=-5$ and $c=8$.

A. 8

B. $-\frac{25}{13}$

C. $\frac{255}{13}$

D. $\frac{25}{13}$

6. The general term of a sequence is $a_n=\frac{1+n}{-3n-n^2}$. Which of the following is incorrect?

A. $a_1=-\frac{1}{2}$

B. $a_2=-\frac{3}{10}$

C. $a_3=-\frac{2}{9}$

D. $a_4=-\frac{5}{27}$

7. Which of the following equations has $x=-1$ as its solution?

A. $5x-10=x+1$

B. $-2(x-8)=18$

C. $3(3+x)+2(x-1)=1$

D. $x+6=-3(2x+1)$

8. In an athletics meet, if a student wins a match, the student's house will get 5 points. If a student loses a match, no points will be added or deducted. If a student is absent, 2 points will be deducted. Students in Tai House win 10 matches, lose 5 matches and are absent for 5 matches. Calculate the average point per match of Tai House.

A. − 2 points

B. + 2 points

C. − 4 points

D. + 4 points

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9. The 10^{th} term of the sequence of triangular numbers 1, 3, 6, 10, … is

A. 53.

B. 54.

C. 55.

D. 56.

10. There are n cards in a deck of playing cards. Anson draws one-third of the cards from the deck. He then passes some of his cards to Ian. Ian has $2n-105$ cards now. Which of the following algebraic expression represents the difference of the numbers of cards between Anson and Ian if Anson has more cards?

A. $\frac{n}{3}-2n-105$

B. $\frac{n}{3}-2n+105$

C. $\frac{3}{n}-2n+105$

D. $\frac{3}{n}+2n-105$

Answer for Section A. Use a pencil to mark your answer as follows:

A	B	C	D
▭	■	▭	▭

	A	B	C	D
1.	▭	▭	▭	▭
2.	▭	▭	▭	▭
3.	▭	▭	▭	▭
4.	▭	▭	▭	▭
5.	▭	▭	▭	▭

	A	B	C	D
6.	▭	▭	▭	▭
7.	▭	▭	▭	▭
8.	▭	▭	▭	▭
9.	▭	▭	▭	▭
10.	▭	▭	▭	▭

Section B (25 marks)

1. Find the values of the following expressions.

(a) $3.4 - 2.7 \times \frac{5}{3} - 6.1$ (3 marks)

(b) $-\frac{19}{8} \div [4 - (2\frac{3}{5} \times \frac{-1}{6})]$ (4 marks)

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2. Solve $\frac{-4x-7}{2} = 2(1+\frac{4x}{5}) - \frac{x}{10}$. (5 marks)

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3. Edan has a piece of rectangular cardboard. The length and the width of the cardboard are 102 cm and 68 cm respectively. He wants to cut the cardboard into identical squares such that the length of a side of each square is maximum and no cardboard is left. How many squares are cut out? (4 marks)

4. (a) Simplify $-2n+6-5n-1-(4n-6n)$. (2 marks)

(b) The general term of a sequence is $a_n = -2n+6-5n-1-(4n-6n)$. Using (a) or otherwise, find the value of a_3. (2 marks)

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5. Frankie earns $\$a$ and $\$b$ from boutique A and boutique B in each day respectively. The amount of money he spends in a week is the sum of half of the amount he earns from boutique A and a quarter of the amount he earns from boutique B in a week. He saves the remaining amount of money. Suppose he works for 5 days a week.

(a) Express the total amount of money he spends in a week in terms of a and b. (1 mark)

(b) Write down a formula for the total amount of money he saves ($\$S$) in a week. (2 marks)

(c) If he earns \$1,000 from boutique A and \$1,200 from boutique B a day, what is the amount of money he saves in a week? (2 marks)

END OF PAPER

Answers written in the margins will not be marked.

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