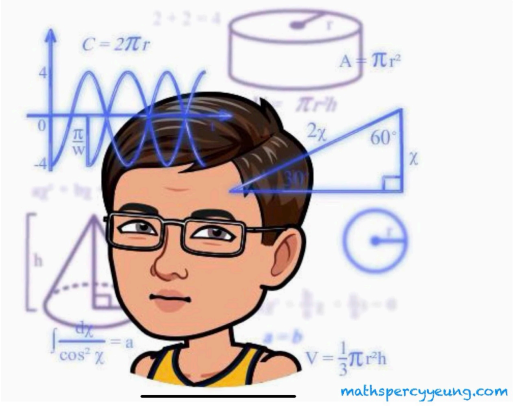
CCK 2022-2023 Mid-Year Exam S1 Maths I



MID YEAR EXAMINATION
2022 – 2023
QUESTION-ANSWER BOOK

Exam Number :				

Subject: **Secondary 1 Mathematics**

Paper: **I**

Time Allowed: **1 hour**

Total Marks: **100**

No. of pages: 11

Page	Marks	
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
Total		

INSTRUCTIONS

(1) Write your name, class and examination number in the spaces provided.

(2) This paper consists of Two Sections, A and B.

(3) Attempt ALL questions in Sections A and B. Write your answers in the spaces provided in this Question-Answer Book. Do not write in the margins.

(4) Unless otherwise specified, all working must be clearly shown.

(5) Unless otherwise specified, numerical answers should be exact or correct to 3 significant figures.

(6) The use of electronic calculators is NOT allowed.

Section A (60 marks): working steps must be shown in answering questions in this section.

1. Write down the first four 2-digit prime numbers. (2 mark)

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2. Write down any four negative even number divisible by 3. (2 mark)

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3. Find the H.C.F. and L.C.M. of 16 and 54. (4 marks)

4. Calculate the following expressions.

(a) $16-[11+(3-1)]$ (2 marks)

(b) $3\frac{7}{18}+4\frac{5}{6}-1\frac{1}{3}$ (2 marks)

(c) $\left(\frac{25}{33}-\frac{5}{11}\right)\div 1\frac{2}{3}$ (3 marks)

5. In each of the following, if the given number is divisible by 3, 4 or 8, put a '✓' in the corresponding box; otherwise, put a '✗'. (3 marks)

	Number	Divisible by 3	Divisible by 4	Divisible by 8
(a)	360144			
(b)	29120			
(c)	5249			

6. Consider the following numbers: (4 marks)

$0.6,\ 6,\ -6,\ \frac{1}{6},\ -6.6\ ,\ 0$

(a) Write down all the positive numbers.

(b) Write down all the negative numbers.

(c) Which two numbers are a pair of opposite numbers?

(d) Which of them has the greatest magnitude?

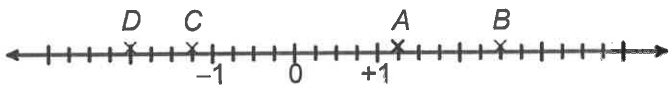
7. If +1 kg means an increase of 1 kg in Jacky's weight, use a directed number to represent (3 marks)

(a) an increase of 8 kg in Jacky's weight,

(b) a decrease of 10 kg in Jacky's weight,

(c) no change in Jacky's weight.

8. Find the directed numbers represented by A, B, C and D on the number line below. (3 marks)

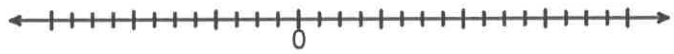


9. Mark and label the following numbers on the number line below. (3 marks)

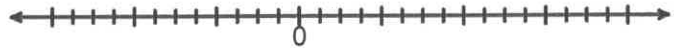
$+3,\ -2,\ 0,\ -1.5,\ 4\frac{1}{2}$

10. With the help of a number line, find the values of the following expressions. (4 marks)

(a) $(-3) + (+6)$



(b) $(-4) + (-1)$



11. Find the values of the following expressions by removing brackets. (4 marks)

(a) $(+6) + (+2)$

(b) $(-11) + (+3)$

12. Determine whether the following are discrete data or continuous data. Circle the correct answers. (4 marks)

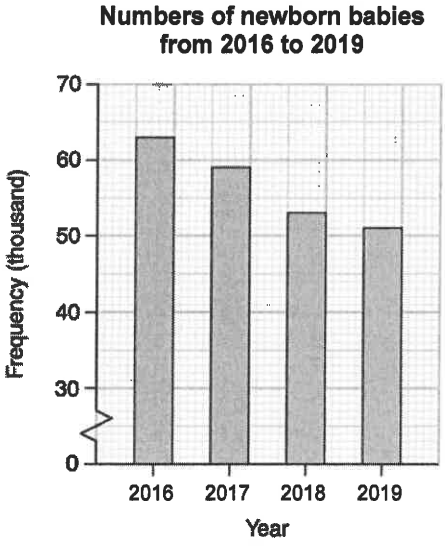
(a) The numbers of floors of shopping malls (discrete / continuous)

(b) The heights of shopping malls (discrete / continuous)

(c) The numbers of words typed by clerks in one minute (discrete / continuous)

(d) The areas of rooms in a school (discrete / continuous)

13. The bar chart below shows the numbers of newborn babies in a city from 2016 to 2019.



(a) What is the difference between the numbers of newborn babies in 2016 and 2019? (2 marks)

(b) Between which two consecutive years was the difference between the numbers of newborn babies the greatest? What was the corresponding difference? (2 marks)

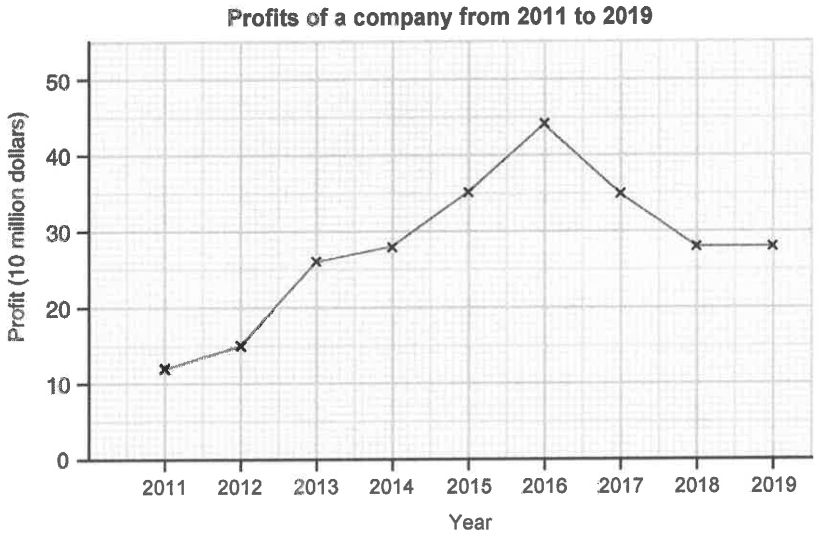
14. The following data show the options of a multiple choice question chosen by a group of students.

B	C	D	D	A	D	D	B	C	D	A
D	A	B	D	C	B	D	C	B	D	B

Complete the following frequency distribution table for the above data. (3 marks)

Option	Tally	Frequency
A		
B		
C		
D		
	Total	

15. The broken line graph below shows the profits (in 10 million dollars) of a company from 2011 to 2019.



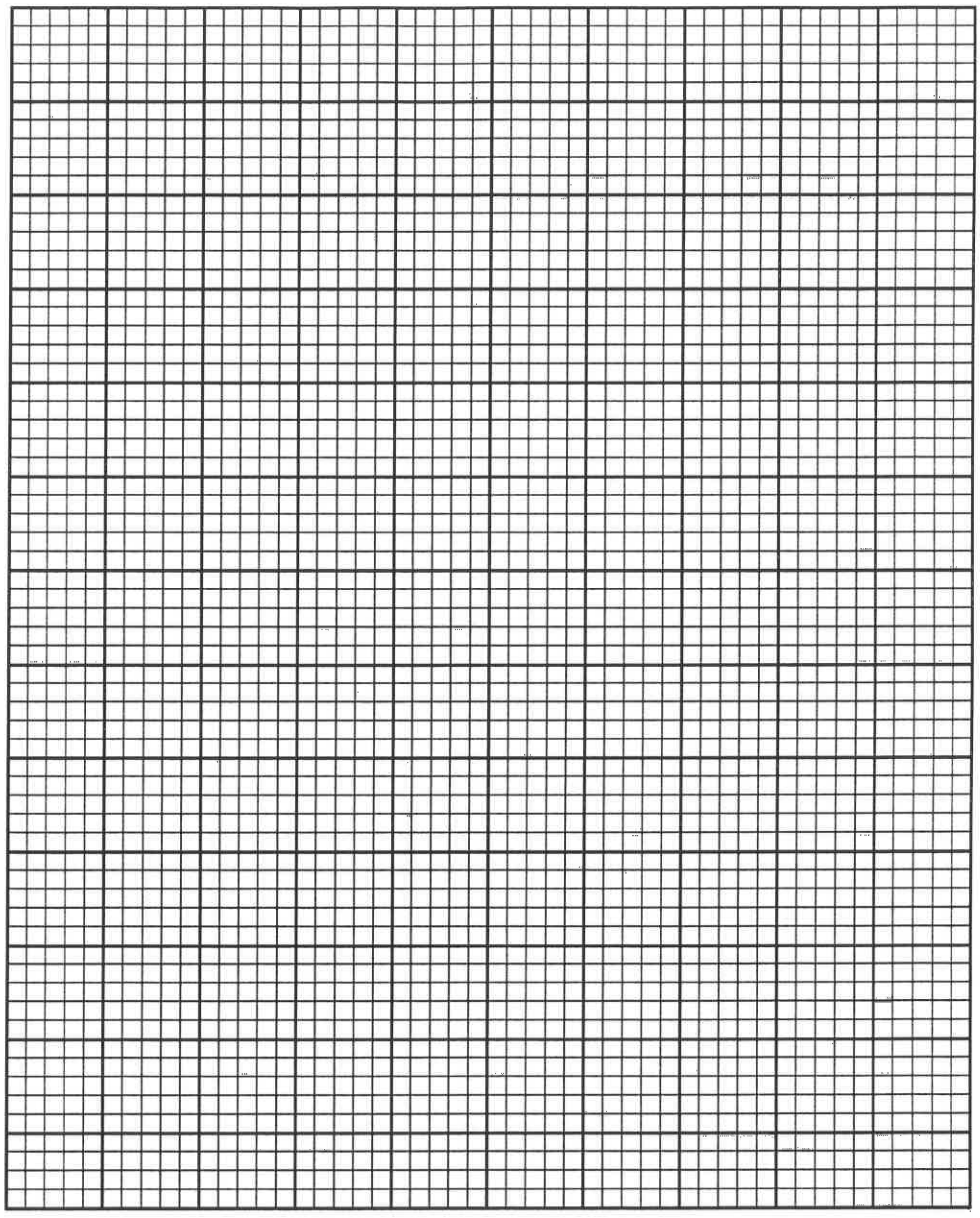
(a) Between which two consecutive years did the company have no change in profit? (1 mark)

(b) What is the difference between the maximum and the minimum profits of the company from 2011 to 2019? (2 marks)

16. The table below shows the sales volumes (correct to the nearest million dollars) of a hand cream from 2014 to 2019.

Year	2014	2015	2016	2017	2018	2019
Sales volume (million dollars)	480	660	370	380	420	450

(a) Draw a broken line graph to present the above data. (5 marks)



(b) Between which two consecutive years was the change in sales volume the largest? (1 mark)

(c) Predict the trend of the sales volume of the hand cream in 2020. (1 mark)

Section B (40 marks): working steps must be shown in answering questions in this section.

1. Find the value of each of the following expressions.

(a) $3\frac{1}{2} \div \left[1\frac{5}{8} - \left(\frac{11}{16} + \frac{5}{24}\right)\right]$ (4 marks)

(b) $20.92 - \left(18.85 - 5\frac{3}{4}\right) \div \frac{5}{6}$ (4 marks)

2. Every weekday, Tony spends $\frac{3}{8}$ of his time on sleeping, $\frac{17}{48}$ of his time on studying and $\frac{1}{12}$ of his time on dining. Then, the remaining time will be his leisure time. Tony claims that his leisure time is over 5 hours every weekday. Do you agree? Explain your answer. (4 marks)

3. Evaluate the following expressions.

(a) $(-5)[3(-2)-(-13)]$ (3 marks) (b) $\dfrac{(-15)-3(+4)}{-3}$ (3 marks)

(c) $\dfrac{(-21)-(-7)}{(+7)-(+21)}$ (3 marks) (d) $\left[\left(-1\frac{1}{4}\right)-\left(-\frac{1}{2}\right)\right]\div\left[(-3)-\left(-6\frac{1}{3}\right)\right]$ (5 marks)

4. The table below shows the occupations of 40 people.

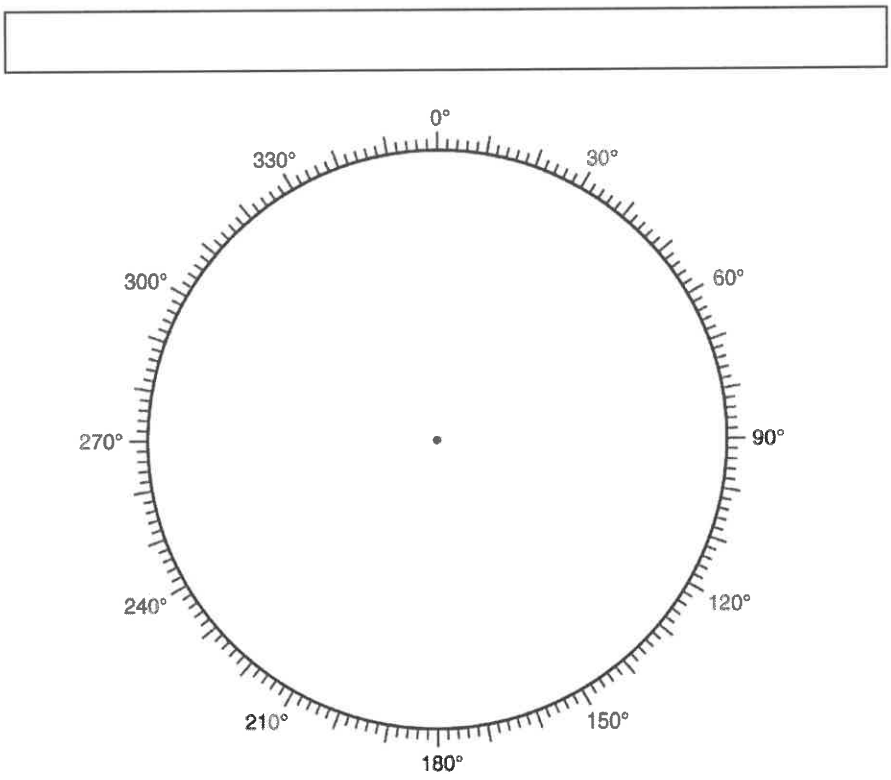
Occupation	Teachers	Drivers	Policemen	Doctors
Number of people	13	16	x	2

(a) Find the value of x. (1 mark)

(b) If a pie chart is used to present the above data, find the angles at the centre of the sectors. (2 marks)

Occupation	**Angle at the centre of the sector**
Teachers	
Drivers	
Policemen	
Doctors	

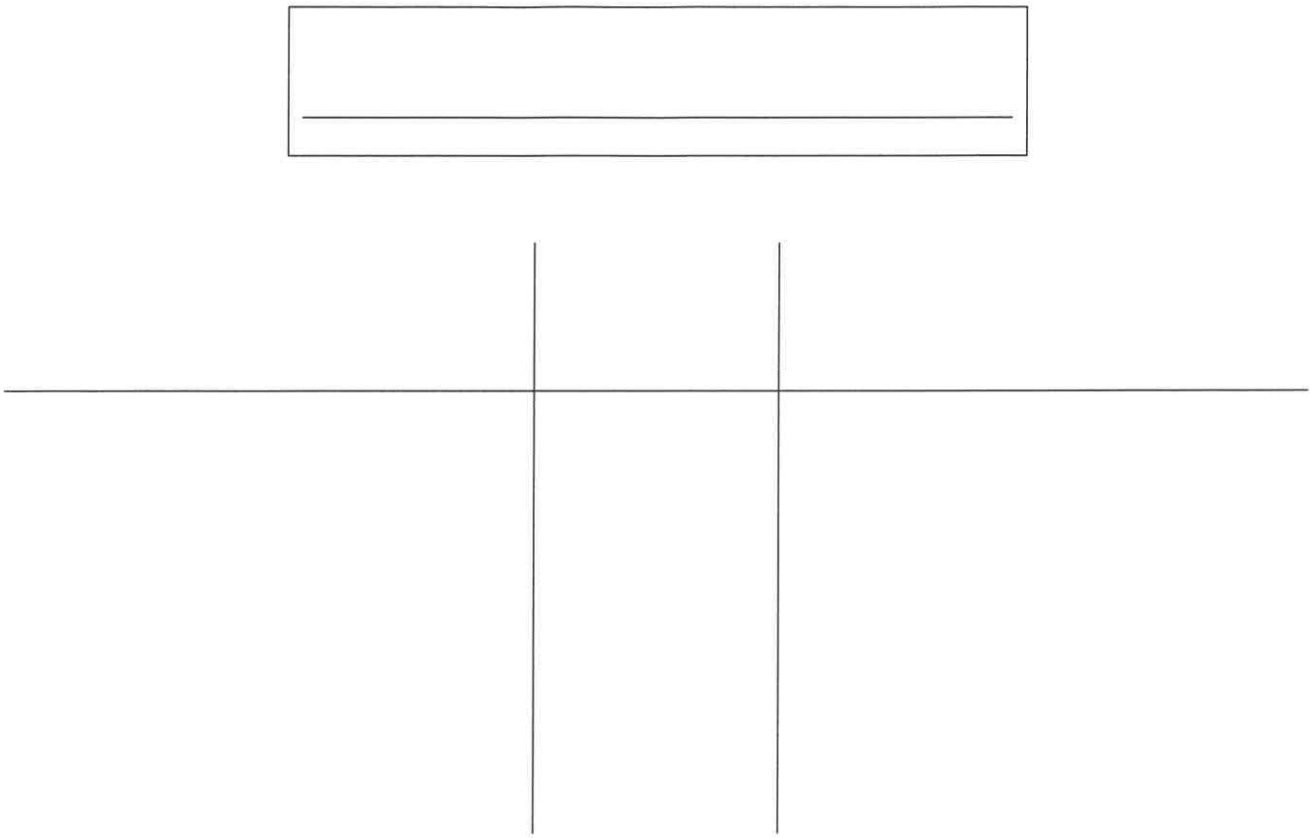
(c) Draw a pie chart to present the above data. (4 marks)



5. The table below shows the javelin results (correct to the nearest m) of S1A and S1B students.

S1A	15	13	20	23	35	40	38	58	38	22
S1B	39	35	48	57	54	48	26	58	46	57

(a) Draw a back-to-back stem-and-leaf diagram to present the above data. (5 marks)



(b) Which class performed better on the whole? Explain your answer. (2 marks)

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