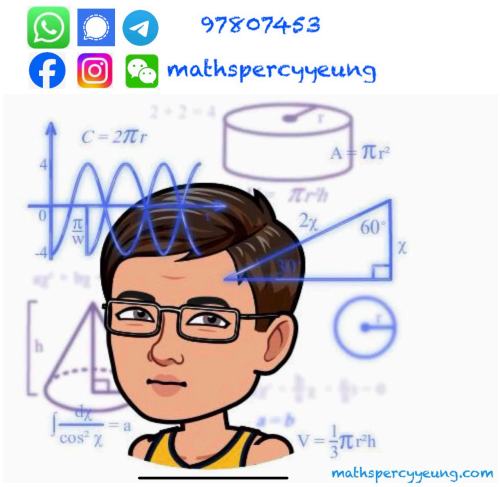
CCK 2022-2023 Mid-Year Exam S1 Maths II



MID YEAR EXAMINATION

2022 – 2023

QUESTION-ANSWER BOOK

Exam Number:				

Subject: **SECONDARY 1 MATHEMATICS**

Paper: **II**

Time Allowed: **1 HOUR**

Total Marks: **100**

No. of pages: 10

Page	Marks	
2		
3		
4		
5		
6		
7		
8		
9		
10		
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) The use of electronic calculators is **NOT** allowed.

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

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

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

1. Express each of the following word sentences in an algebraic expression. (6 marks)

   (a) Add b to $2a$.

   (b) Multiply $2y$ by x.

   (c) Subtract 25 from the product of a and b.

   (d) Divide y by the square of x.

2. Simplify the following expressions. (4 marks)

   (a) $2r - r - 3r$

   (b) $10 \times a \div 5 - a$

3. It is given that the formula $P = -2(3b + 4)$. Find the value of P if $b = 7$. (3 marks)

4. Given the algebraic expression $\frac{8m}{n}$, find its value when $m = 5, n = -4$. (3 marks)

Answers written in the margins will not be marked.

5. Solve each of the following equations. (15 marks)

(a) $2x-7=13$

(b) $4(6-x)=24$

(c) $7-e=2e-2$

(d) $\dfrac{c+20}{7}=2+c$

(e) $\dfrac{3}{5}-\dfrac{p}{10}=\dfrac{3p}{10}$

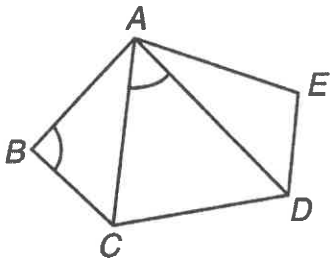
Answers written in the margins will not be marked.

Go on to the next page

Page total

6. If the sum of two consecutive odd numbers is 80, find the values of these two numbers. (5 marks)

7. Name **TWO** line segments and **ALL** marked angles in the figure. (4 marks)



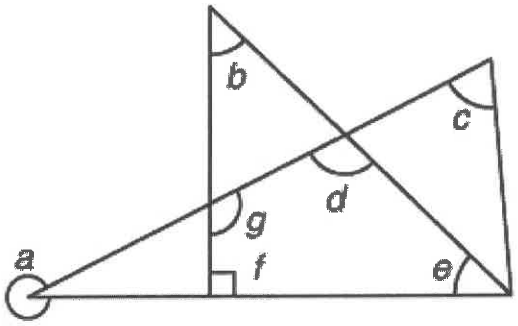
Line segments: _____

Marked angles: _____

8. In the figure, which of the marked angles is/are (3 marks)

(a) acute angle(s)?

(b) obtuse angle(s)?



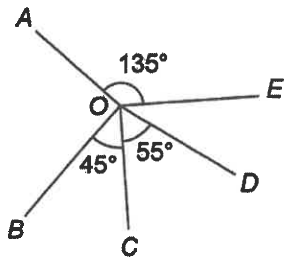
(c) reflex angle(s)?

Answers written in the margins will not be marked.

Go on to the next page

Page total

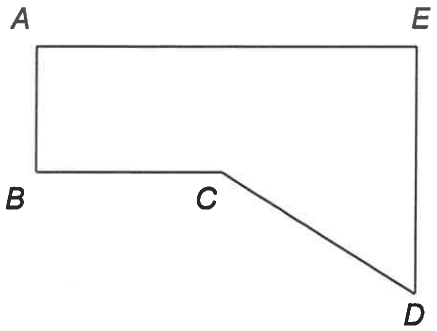
9. Refer to the figure.



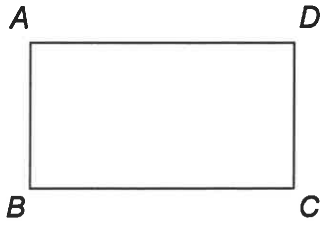
(a) Name a pair of supplementary angles. (1 mark)

(b) If $\angle COD$ and $\angle DOE$ are complementary angles, find $\angle DOE$. (2 marks)

10. Indicate the two pairs of parallel lines and the three pairs of perpendicular lines on the figure with suitable symbols below. (2 marks)



11. In the figure, $ABCD$ is a rectangle.



Name all the line segments which satisfy each of the following conditions:

(a) parallel to AD (1 mark)

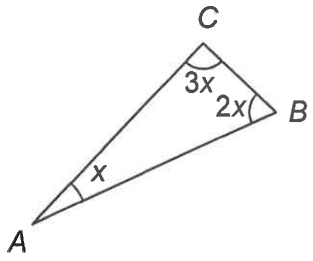
(b) perpendicular to AB (1 mark)

Answers written in the margins will not be marked.

Go on to the next page

Page total

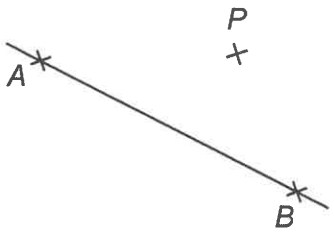
12. Referring to the figure below, find x. (3 marks)



13. In $\triangle ABC$, $\angle B = 12°$ and $\angle C = 54°$. Find $\angle A$. (3 marks)

14. Using a pair of compass or protractor, construct an equilateral triangle whose side is 4 cm. (2 marks)

15. The figure below shows a straight line AB and a point P. Using a ruler and a set square, construct
    (a) the line L_1 passing through point P and parallel to AB, (1 mark)
    (b) the line L_2 passing through point P and perpendicular to AB. (1 mark)



Answers written in the margins will not be marked.

Go on to the next page

Page total

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

1. Simplify the following expressions. (6 marks)

   (a) $m \times (-n) \times m \div (-2) \times 5m$

   (b) $6x \div 2 - 4y \div 8 - x$

2. Consider the formula $V = (p-8)^2 + q^2$. If $p = -10$ and $q = 3$, find the value of V by the method of substitution. (3 marks)

3. Solve the equation $3(x + 0.1) - 4(x - 0.5) = 5.3$. (4 marks)

Answers written in the margins will not be marked.

4. Solve the equation $\frac{c+1}{2}+\frac{1}{3}=\frac{1}{3}-2(c+1)$. (4 marks)

5. May is now x years old. Rebecca's age is 3 times May's age.

(a) After 3 years, express in terms of x, (2 marks)

(i) May's age,

(ii) Rebecca's age.

(b) Three years later, Rebecca's age will be 7 years more than 2 times May's age. Find their present ages. (5 marks)

Answers written in the margins will not be marked.

Go on to the next page

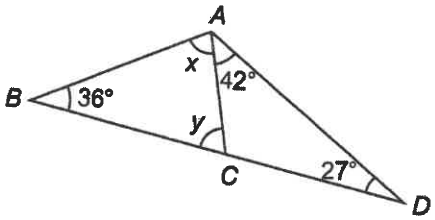
Page total

6. (a) Express the following angles in degrees. (3 marks)

$\frac{6}{5}$ right angles, $\frac{5}{12}$ straight angle, $\frac{2}{5}$ round angle

(b) Arrange the angles in (a) in descending order of size. (1 mark)

7. In the figure, BCD is a straight line. Find x and y. (6 marks)

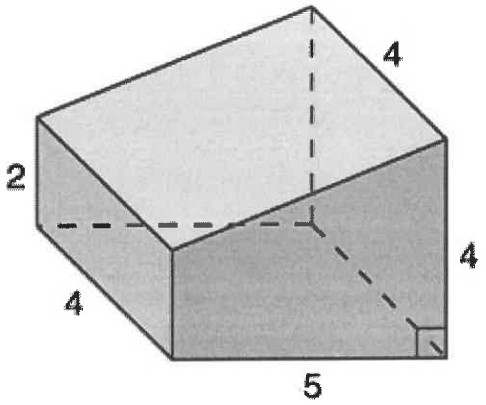


Answers written in the margins will not be marked.

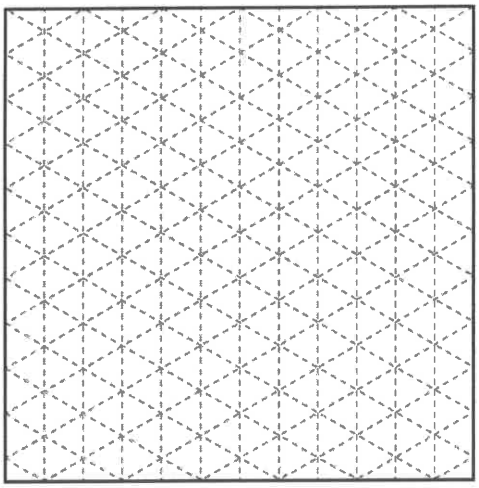
Go on to the next page

Page total

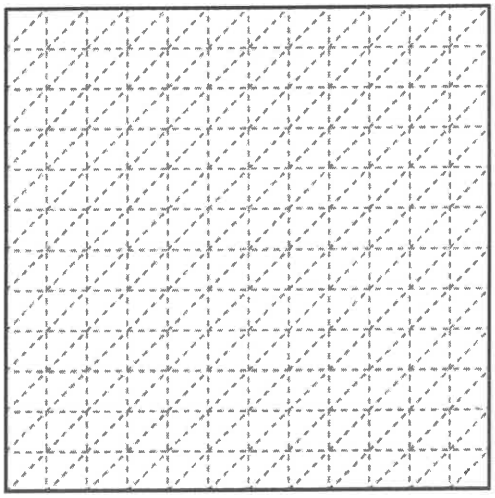
8. Draw the 2-D representations of the given right prisms on isometric grid paper and oblique grid paper respectively. (6 marks)



Isometric grid paper



Oblique grid paper



END OF PAPER

Answers written in the margins will not be marked.

Page total