

2018-2019 F.5 1st TERM EXAM-MATH-CP 1

18-19 F.5
1st TERM EXAM
MATH CP
PAPER 1

2018 – 2019
Form 5 First Term Examination

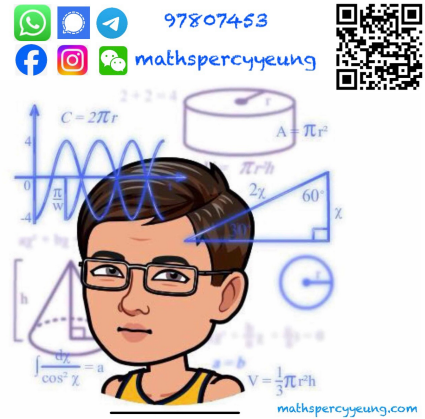
MATHEMATICS Compulsory Part PAPER 1

Question–Answer Book

2nd January, 2019
8:15 am – 10:00 am (1 hour 45 minutes)
This paper must be answered in English

INSTRUCTIONS

1. Write your name, class and class number in the spaces provided on this cover.
2. This paper consists of THREE sections, A(1), A(2) and B.
3. Attempt 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.
4. Unless otherwise specified, all working must be clearly shown.
5. Unless otherwise specified, numerical answers should be either exact or correct to 3 significant figures.
6. The diagrams in this paper are not necessarily drawn to scale.



Sections	Marks
A (1 – 4)	
A (5 – 11)	
A Total	/56
B Total	/28
TOTAL	/84

Section A(1) (28 marks)

1. Simplify $\frac{x^5y^{-2}}{(x^2y^{-3})^{-2}}$ and express your answer with positive indices. (3 marks)

2. Factorize

(a) $4p - 10q$,

(b) $2p^2 + pq - 15q^2$,

(c) $4p - 10q - 2p^2 - pq + 15q^2$.

(4 marks)

3. Consider the formula $x + 8 = 3(5x + 2y)$.

(a) Make y the subject of the above formula.

(b) If the value of x is decreased by 6, find the change in the value of y .

(4 marks)

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14. (a) In Figure 3, L_1 and L_2 intersect at the point $(9, 2)$ while L_2 and L_3 intersect at the point $(6, 5)$. The equation of L_3 is $5x + 6y - 60 = 0$.

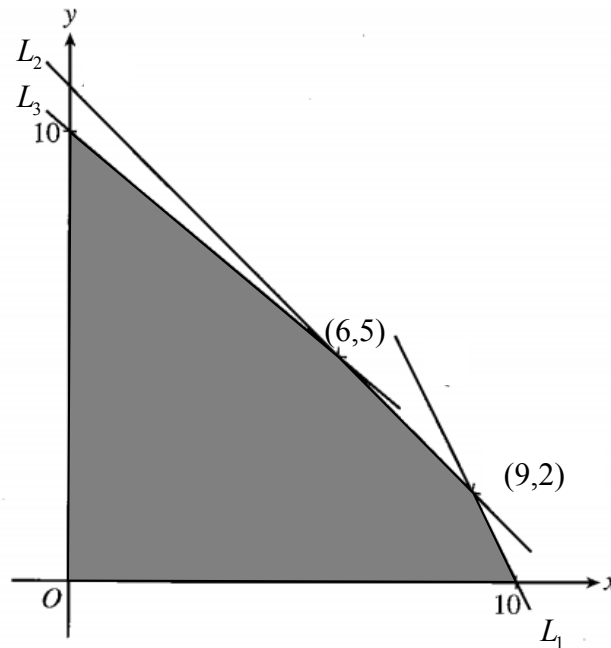


Figure 3

- (i) Find the equations of L_1 and L_2 .
- (ii) In Figure 3, the shaded region (including the boundary) represents the solution of a system of inequalities. Write down the system of inequalities. (4 marks)
- (b) The owner of a boat-building yard decided to build two types of boats, type A and type B , under the following conditions.
- (1) A boat of type A needs 30 m^2 of working space and a boat of type B needs 36 m^2 of working space. He has 360 m^2 of working space.
 - (2) The expenses on materials for building a boat of type A and a boat of type B are \$8 000 and \$4 000 respectively. He can spend at most \$80 000 on buying the materials.
 - (3) He has enough manpower to build at most 11 boats.

Let x and y be the numbers of boats of type A and type B to be built respectively. Suppose the profit on a boat of type A is 20% more than that on a boat of type B . Find the number of boats of each type that should be built to maximize the total profit on selling the two types of boats.

(5 marks)

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