

LA SALLE COLLEGE
FINAL EXAMINATION 2012-2013

Form 3 Mathematics Paper 1

Section C

Question – Answer Book

Instructions

1. Write your examination number in the spaces provided on the top right corner of this cover page.
2. The total mark of this section is 40.
3. Attempt ALL questions in this section.
Write your answers in the spaces provided in this Question-Answer Book. The last two pages are supplementary answer sheets.
4. 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.
7. Use of HKEAA approved calculators is allowed.
8. This paper must be answered in English.

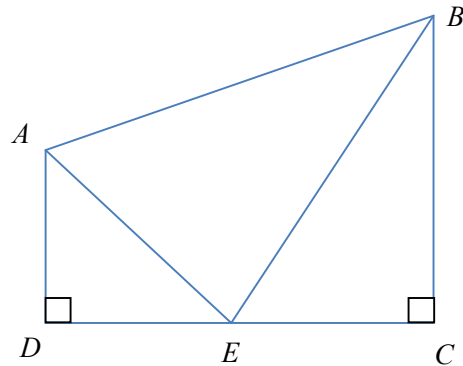
Exam Number			
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Question No.	Marks
1	(9)
2	(9)
3	(11)
4	(11)
Section C Total Marks	(40)

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Section C [40 marks]

1. In the figure, $ABCD$ is a trapezium where $\angle ADC = \angle BCD = 90^\circ$. E is a point on DC such that $AD = DE = EC = 1$ and $BE = 2$.



- (a) Find the length of BC and hence find the area of $\triangle AEB$. (3 marks)
- (b) Show that $\angle AEB = 75^\circ$. (2 marks)
- (c) Using the above results, find the **exact** value of $\sin 75^\circ$. (4 marks)

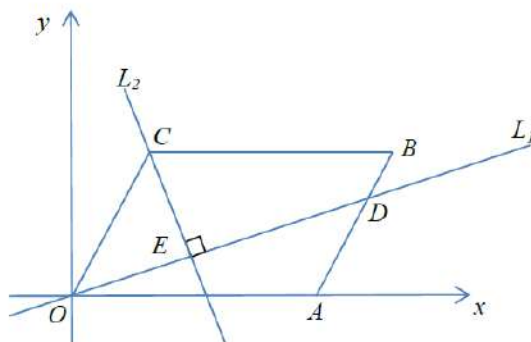
(Leave your answers in surd form if necessary.)

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2. In the figure, $O(0, 0)$, $A(10, 0)$, B and $C(3, 6)$ are the vertices of a parallelogram. L_1 is a straight line passing through O and intersects AB at D such that $AD:DB = 2:1$.



- (a) Write down the coordinates of B . (1 mark)
- (b) Find the equation of L_1 . (3 marks)
- (c) L_2 is another straight line passing through C and perpendicular to L_1 . Find the equation of L_2 . (2 marks)
- (d) L_1 and L_2 intersect at E , find the ratio $OE : ED$. (3 marks)

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Supplementary Answer Sheet (1)

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Supplementary Answer Sheet (2)

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