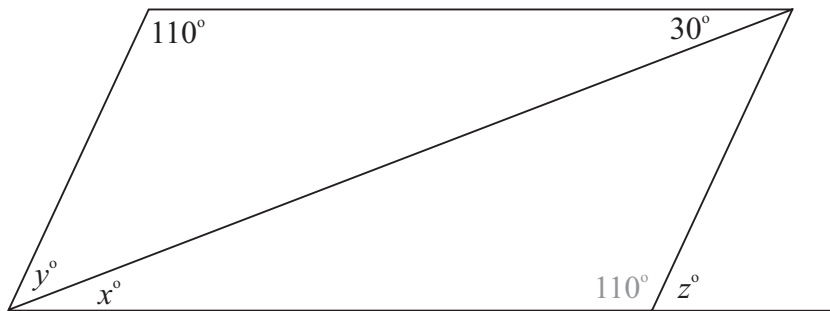


LC 2015 (SET B): PAPER 2

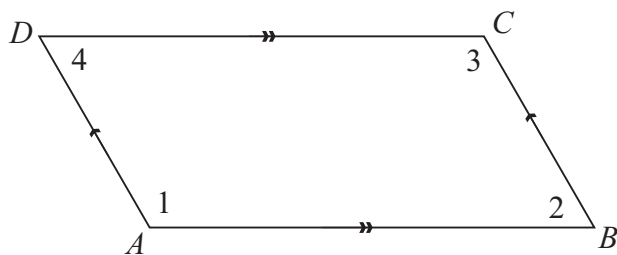
QUESTION 4 (25 MARKS)

Question 4 (a)

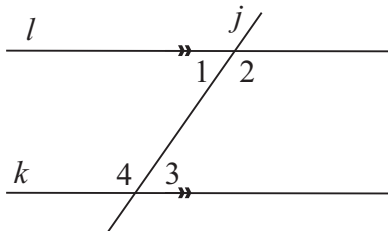


PROPERTIES OF PARALLELOGRAMS

1. Opposite sides are equal in length:
 $|AB| = |DC|$ and $|AD| = |BC|$.
2. Opposite sides are parallel:
 $AB \parallel DC$ and $AD \parallel BC$.
3. Opposite angles are equal in measure:
 $\angle 1 = \angle 3$ and $\angle 2 = \angle 4$.

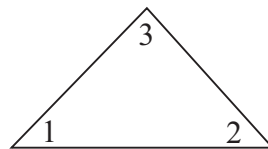


ALTERNATE ANGLES



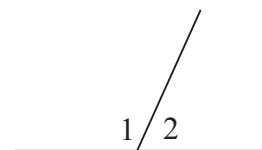
Lines k and l are parallel.
Line j is a transversal.
Alternate angles are equal.
 $\therefore \angle 1 = \angle 3$ and $\angle 2 = \angle 4$.

3 ANGLES IN A TRIANGLE



$$\angle 1 + \angle 2 + \angle 3 = 180^\circ$$

STRAIGHT ANGLE



$$\angle 1 + \angle 2 = 180^\circ$$

$$x^\circ = 30^\circ \text{ [Alternate angles]}$$

$$y^\circ = 180^\circ - 110^\circ - 30^\circ = 40^\circ \text{ [Three angles in a triangle add up to } 180^\circ\text{]}$$

$$110^\circ + z^\circ = 180^\circ \Rightarrow z^\circ = 180^\circ - 110^\circ = 70^\circ \text{ [A straight angle is } 180^\circ\text{]}$$

MARKING SCHEME NOTES

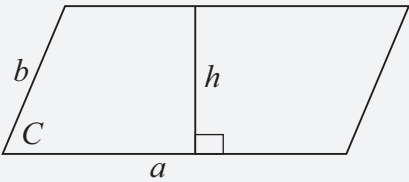
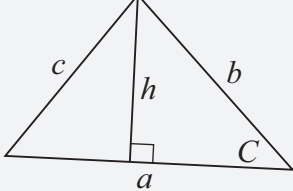
Question 4 (a) [Scale 20D (0, 5, 10, 15, 20)]

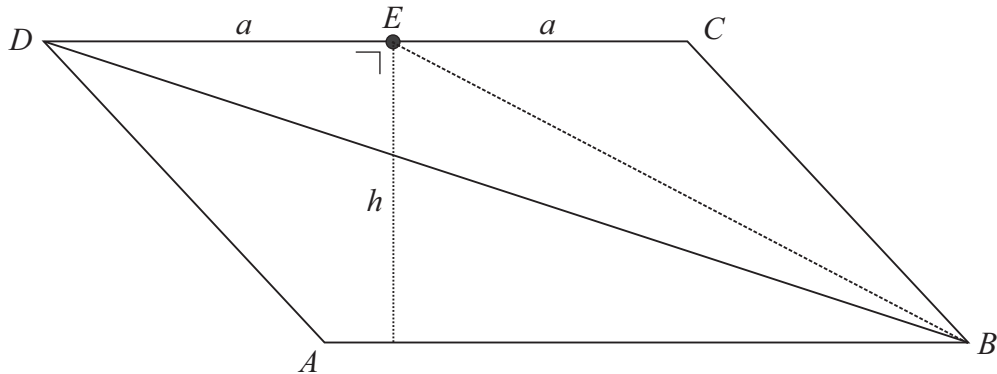
- 5:**
- Any correct relevant work or statement for x , y , or z
 - One correct value without reason
- 10:**
- One correct value and reason.
 - Two correct values without reasons.
 - Two correct with one reason
- 15:**
- Two correct values, both with reasons.
 - All correct values with one reason.

Note: Answers may be on the diagram

Question 4 (b)

FORMULAE AND TABLES BOOK: Length and area (page 8)

<p>PARALLELOGRAM</p>  <p style="margin-left: 100px;">$A = ah$ $A = ab \sin C$</p>	<p>TRIANGLE</p>  <p style="margin-left: 100px;">$A = \frac{1}{2} ah$ $A = \frac{1}{2} ab \sin C$</p>
---	---



- (i) Area of parallelogram $ABCD = 480 \text{ m}^2$
 A diagonal bisects the area of a parallelogram.
 $\therefore |\triangle ABD| = 240 \text{ m}^2$
- (ii) $|\triangle BCD| = 240 \text{ m}^2$
 $|\triangle BCE| = |\triangle BED|$ [Area of each triangle = $\frac{1}{2} ah$]
 $\therefore |\triangle BCE| = 120 \text{ m}^2$

MARKING SCHEME NOTES

Question 4 (b) (i) (ii) [Scale 5C (0, 3, 4, 5)]

3: • Any correct relevant work on the area of triangle in either part

4: • One correct area

5: • Accept correct answer without work