## Geometry (Q 4, Paper 2)

## Lesson No. 3: Parallel Lines

## 2003

4 (a) In the diagram, $L, M$ and $N$ are parallel lines. They make intercepts of the indicated lengths on $J$ and $K . a b$ is parallel to $J$.
(i) Write down the length of [ab].
(ii) Write down the length of $[a c]$.


## Solution

[A] Parallelograms: These are four-sided figures whose opposite sides are parallel.

Theorem 2: The opposite sides of a parallelogram have equal lengths.
$\therefore|a b|=|d c|$ and $|a d|=|b c|$.


The highlighted shape is a parallelogram as $M$ is parallel to $N$ and $a b$ is parallel to $J$.
$|a b|=5$ [Theorem 2]


4 (a) (ii)
[B] Three Parallel Lines:
Consider three equally spaced parallel lines $K, L$ and $M$. Two lines called transversals, $X$ and $Y$, cut these parallel lines.

Theorem 3: If three parallel lines make intercepts of equal length on a transversal, then they will make intercepts of equal lengths on any other transversal.

$|a c|=6$ [Theorem 3]


