## Question 6

Answer either 6A or 6B.

## Question 6A

(a) Prove that, if two triangles $\triangle A B C$ and $\triangle A^{\prime} B^{\prime} C^{\prime}$ are similar, then their sides are proportional, in order:

$$
\frac{|A B|}{\left|A^{\prime} B^{\prime}\right|}=\frac{|B C|}{\left|B^{\prime} C^{\prime}\right|}=\frac{|C A|}{\left|C^{\prime} A^{\prime}\right|} .
$$

Diagram:

Given:

To Prove:


## Construction:



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(b) Given the line segment [ $B C]$, construct, without using a protractor or set square, a point $A$ such that $|\angle A B C|=60^{\circ}$. Show your construction lines.


## OR

## Question 6B

$[A B]$ and $[C D]$ are chords of a circle that intersect externally at $E$, as shown.

(a) Name two similar triangles in the diagram above and give reasons for your answer.

(b) Prove that $|E A| \cdot|E B|=|E C| \cdot|E D|$.

(c) Given that $|E B|=6 \cdot 25,|E D|=5 \cdot 94$ and $|C B|=10$, find $|A D|$.


