

1.

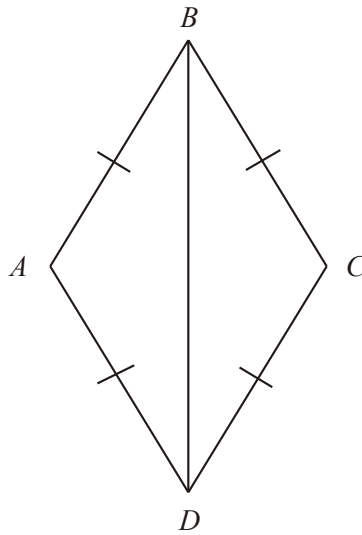


Diagram **NOT** accurately drawn

In the diagram, $AB = BC = CD = DA$.

Prove that triangle ADB is congruent to triangle CDB .

(Total 3 marks)

2.

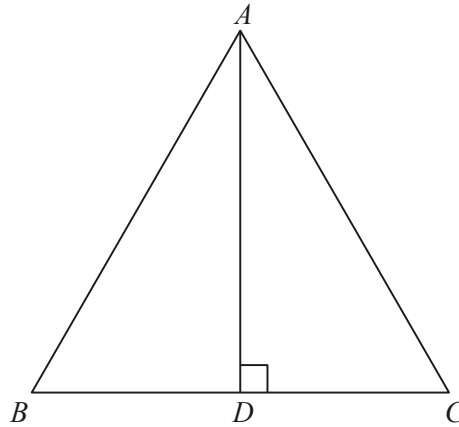


Diagram **NOT** accurately drawn

ABC is an equilateral triangle.

D lies on BC .

AD is perpendicular to BC .

(a) Prove that triangle ADC is congruent to triangle ADB .

(3)

(b) Hence, prove that $BD = \frac{1}{2}AB$.

(2)
(Total 5 marks)

3.

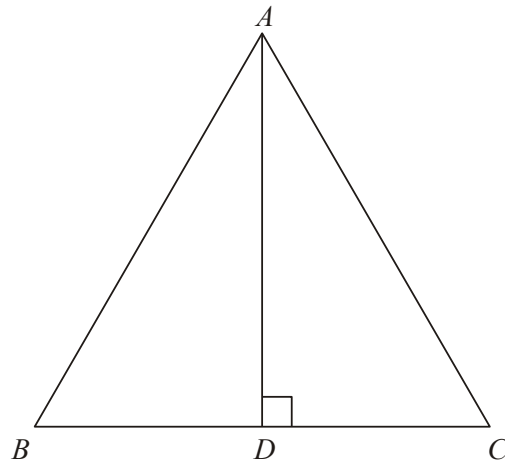


Diagram **NOT** accurately drawn

ABC is an equilateral triangle.

D lies on BC .

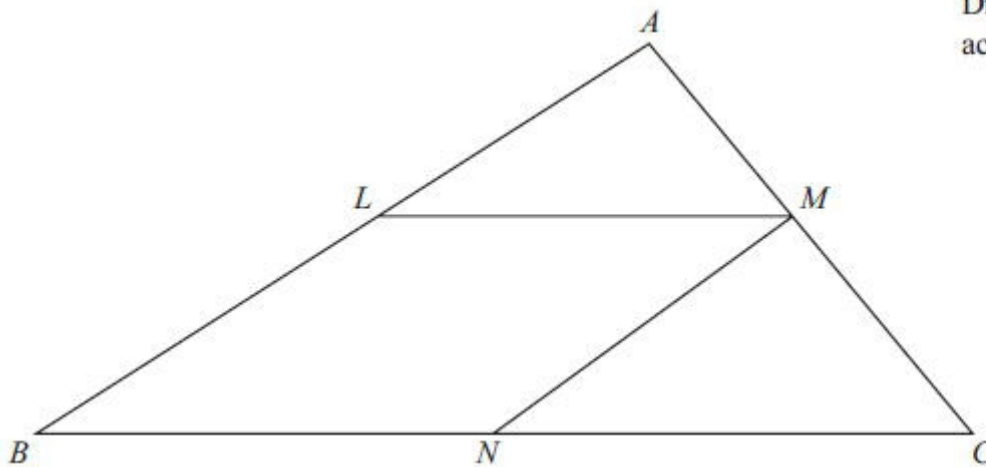
AD is perpendicular to BC .

Prove that triangle ADC is congruent to triangle ADB .

(Total 3 marks)

4.

Diagram NOT
accurately drawn



The diagram shows a triangle ABC .

$LMNB$ is a parallelogram where

L is the midpoint of AB ,

M is the midpoint of AC ,

and N is the midpoint of BC .

Prove that triangle ALM and triangle MNC are congruent.

You must give reasons for each stage of your proof.

(Total 3 marks)