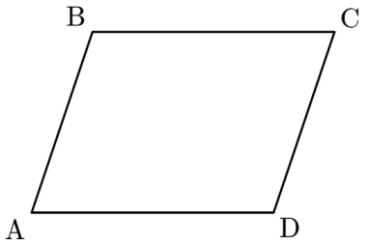
a)

The diagram shows a parallelogram ABCD.

Prove that the triangles ABD and BCD are congruent.

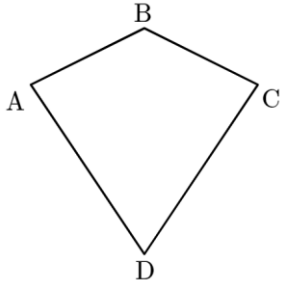


What condition of congruency can we use?	SSS (Side, side, side – If the three sides of one triangle are equal to the three sides of another triangle, the two triangles are congruent)
What can we say about the two triangles?	S: AB = CD, because the opposite sides of a parallelogram are equal S: BC = AD, because the opposite sides of a parallelogram are equal S: AC is a shared side of both triangles
What does this mean?	Because the three sides of triangle ABC are equal to the three sides of another triangle, we can say that triangles ABC and ACD are congruent.

b)

The diagram shows a kite ABCD.

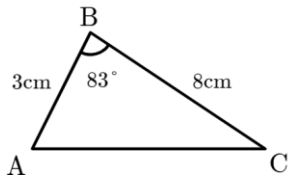
Prove that the triangles ABD and BCD are congruent.

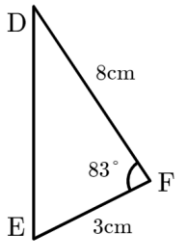


What condition of congruency can we use?	SAS (Side, angle, side – If any two sides and the angle between them of one triangle are equal to two sides and the angle between them of another triangle, the two triangles are congruent)
What can we say about the two triangles?	S: AB = BC, because these are equal sides of the kite A: DAB = DCB, because a kite has a line of symmetry (BD) S: AD = CD, because these are equal sides of the kite
What does this mean?	

c)

Prove that the triangles ABC and DEF are congruent.





What condition of congruency can we use?	SAS (Side, angle, side – If any two sides and the angle between them of one triangle are equal to two sides and the angle between them of another triangle, the two triangles are congruent)
What can we say about the two triangles?	
What does this mean?	

d)

Prove that the triangles ABC and DEF are congruent.