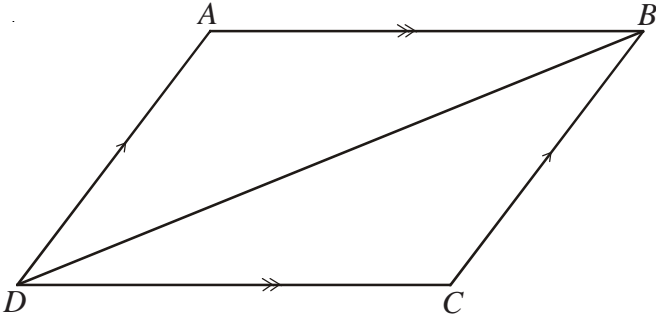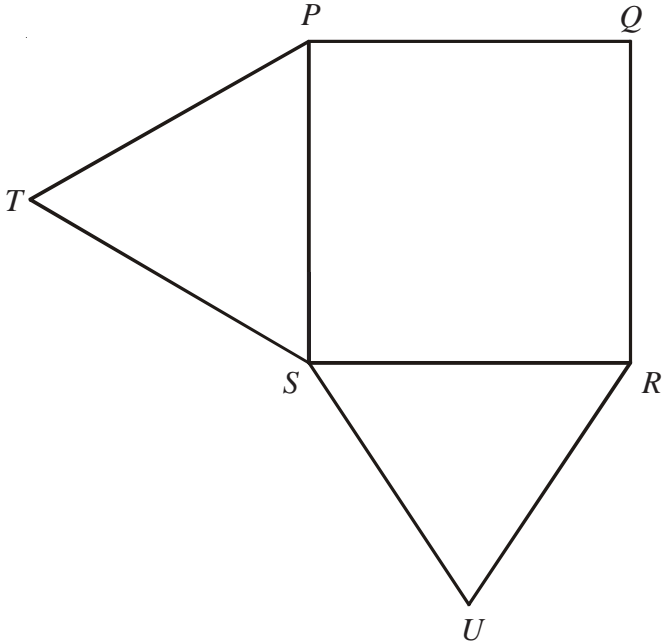1) *ABCD* is a quadrilateral.

AB is parallel to *DC*.
DA is parallel to *CB*.

Prove that triangle *ABD* is congruent to triangle *CDB*.

2)

PQRS is a square.
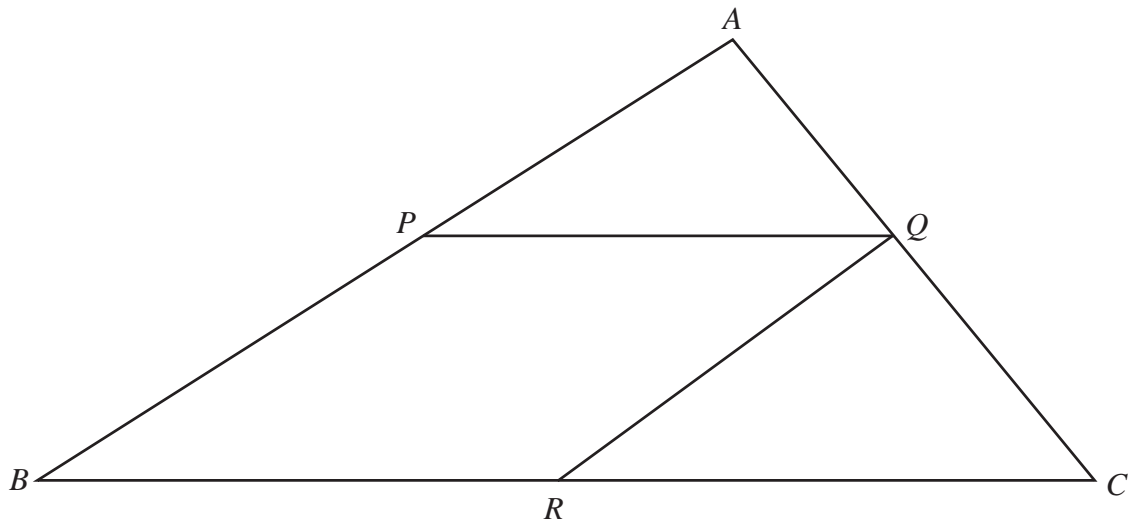*PTS* and *SUR* are equilateral triangles.

a) Prove that triangle *USP* is congruent to triangle *TSR*.

X is the point such that *RUXT* is a parallelogram.

b) Prove that *UP* = *UX*

1)

The diagram shows a triangle *ABC*.

PQRB is a parallelogram where
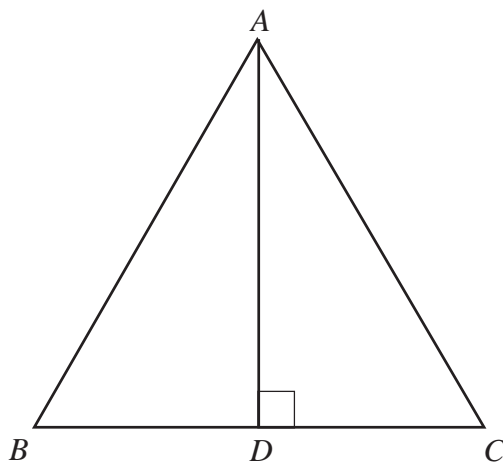   *P* is the midpoint of *AB*,
    Q is the midpoint of *AC*,
and   *R* is the midpoint of *BC*.

Prove that triangle *APQ* and triangle *QRC* are congruent.
You must give reasons for each stage of your proof.

2)

ABC is an equilateral triangle.

D lies on *BC*.

AD is perpendicular to *BC*.

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

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