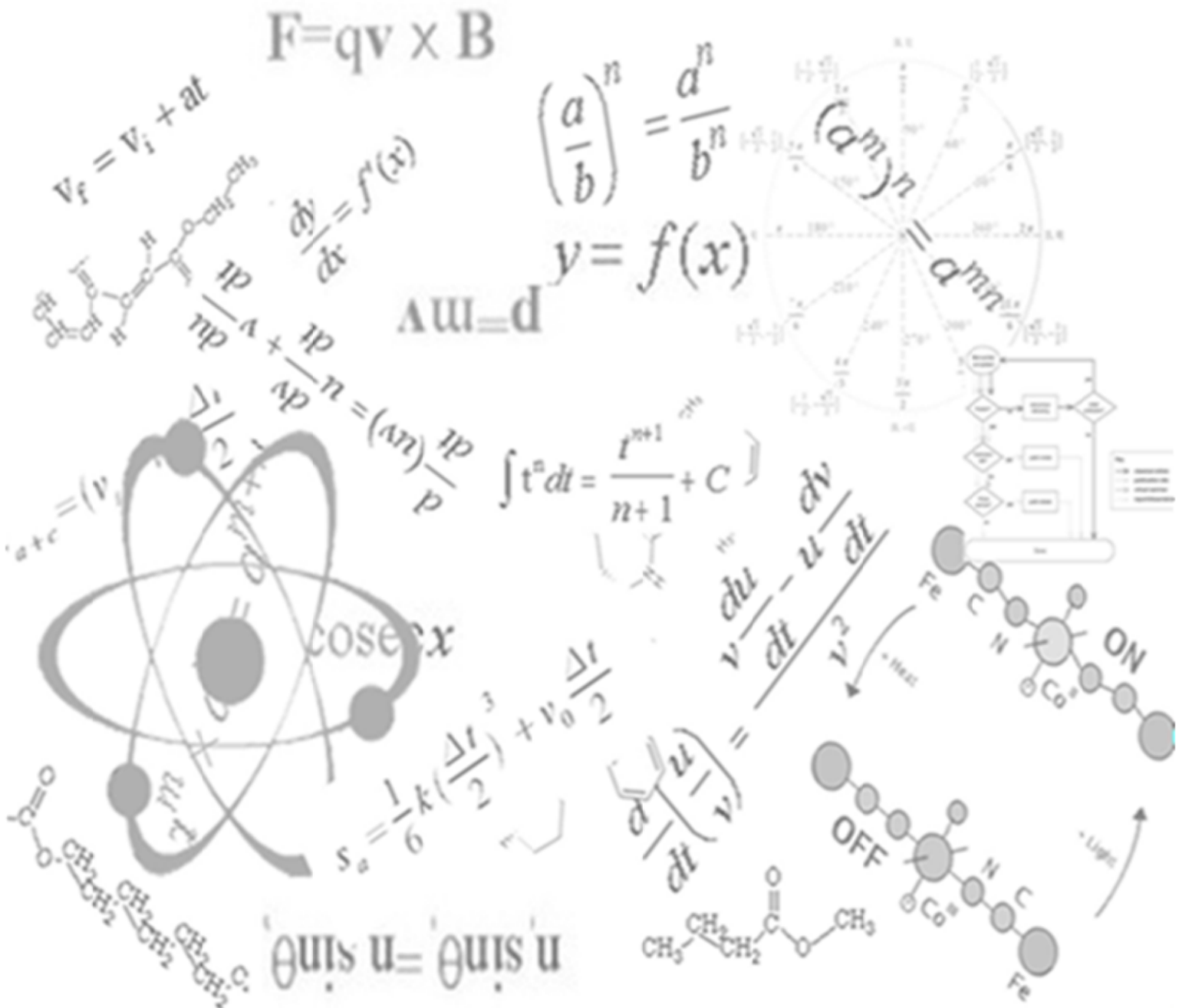


where students come first!



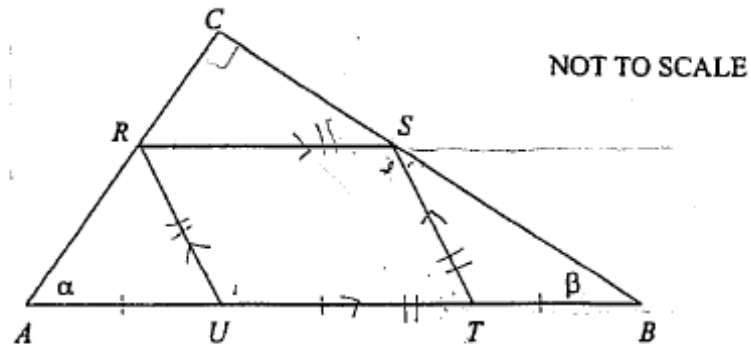
Year 11- Mathematics Advanced Application of Geometrical Properties



Applications of Geometrical Properties

1. (5 marks)

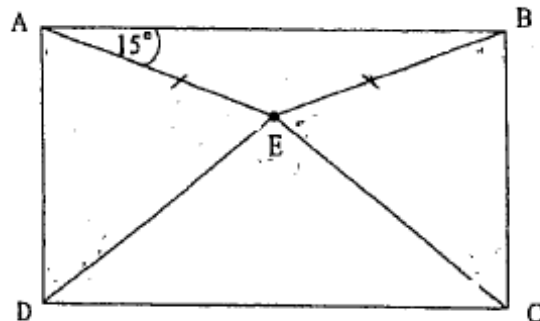
RSTU is a rhombus.



- prove that triangle STB is isosceles
- Prove that $\angle STU = 2\angle SBT$
- Hence prove that $\angle ACB$ is a right angle

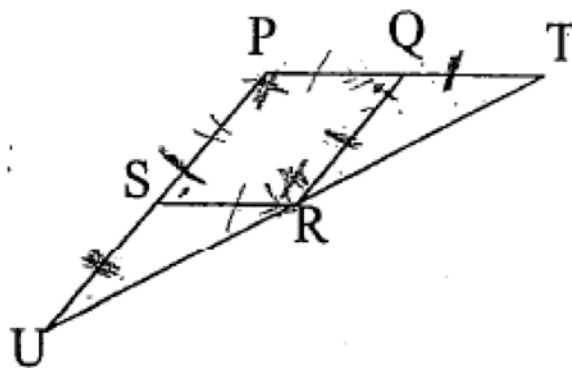
2. (5 marks)

$ABCD$ is a rectangle and $AE = AB$.



- Prove that $\angle DAE = \angle CBE$
- Prove that triangles ADE and BCE are congruent
- Hence prove that triangle DEC is isosceles

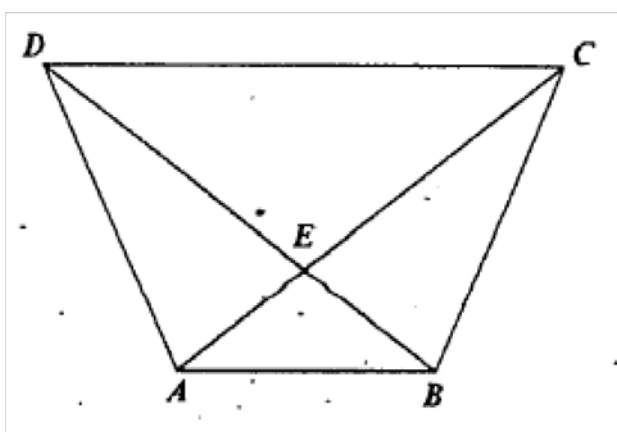
3. (4 marks)



PQRS is a parallelogram. PQ is produced beyond Q to T so that $QT = QR$ and PS is produced beyond S to U so that $SU = PS$. T, R and U are collinear.
 Prove that PQRS is a rhombus.

3

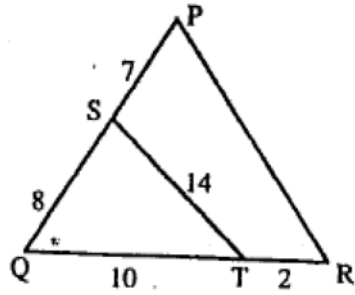
4. (4 marks)



ABCD is a quadrilateral where $\angle DAB = \angle CBA$, $AD=BC$.

- i) Prove triangles ADB and BCA are congruent
- ii) explain why $AC=BD$
- iii) prove $AE=BE$

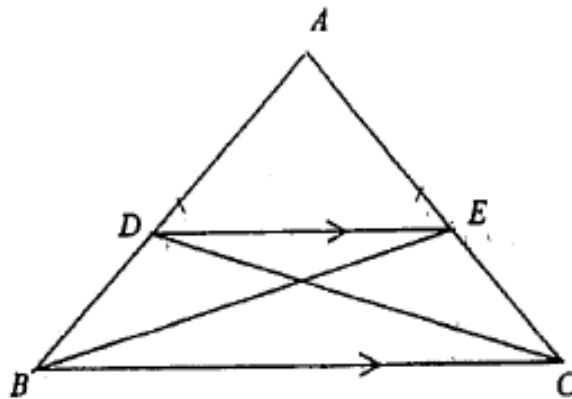
5. (4 marks)



Given the diagram:

- (i) Prove that $\triangle QST$ is similar to $\triangle QRP$.
- (ii) Hence find the length of PR.

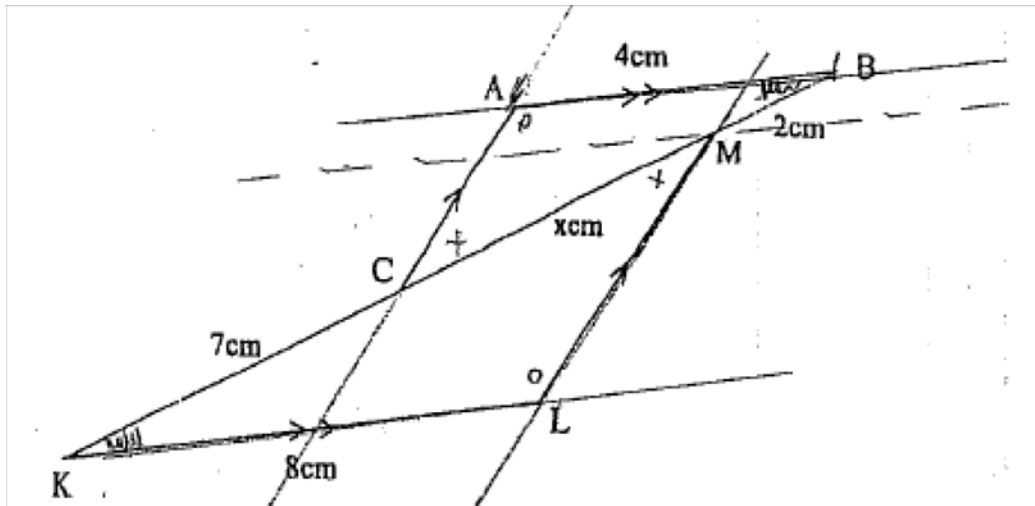
6. (3 marks)



ABC is an isosceles triangle where $AB=AC$.

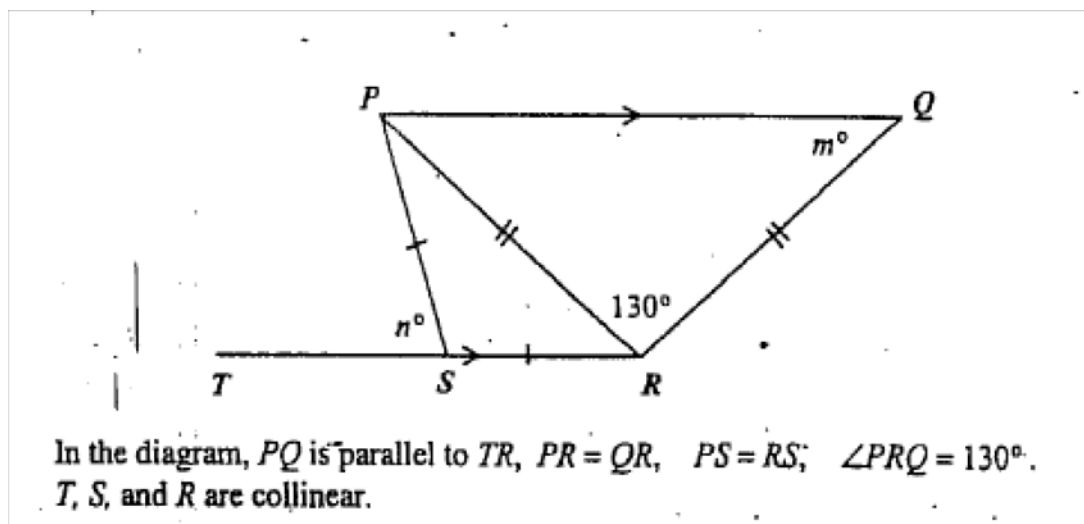
- i) show that ADE is an isosceles triangle
- ii) prove that $DB=EC$

7. (3 marks)



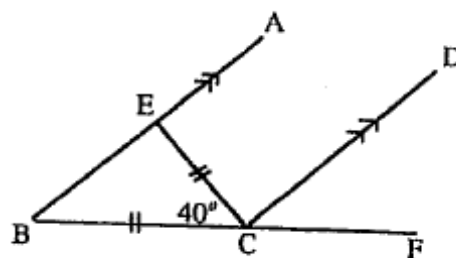
- i) Show that triangles ABC and KLM are similar
- ii) Find CM

8. (4 marks)



- i) Find m
- ii) Find n

9. (2 marks)



Find $\angle ECD$

10. (4 marks)

From the diagram evaluate x and y .

