



MATHS

BOOKS - CAMBRIDGE MATHS (KANNADA ENGLISH)

QUADRILATERALS

Exercise 7 1

1. The angles of quadrilateral are in the ratio 3 : 5 : 9 : 13. Find all the angles of the quadrilateral.

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2. If the diagonals of a parallelogram are equal, then show that it is rectangle .



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3. Show that if the diagonals of a quadrilateral bisect each other at right angles then it is a rhombus.



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4. Show that the diagonals of a square are equal and bisect each other at right angles.



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5. Show that if the diagonals of a quadrilateral are equal and bisect each other at right angles then it is a square.



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6. Diagonals AC of a parallelogram ABCD bisects $\angle A$. Show that it bisects $\angle C$ also

ABCD is a rhombus



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7. ABCD is a rhombus Show that diagonal AC bisects $\angle A$ as well as $\angle C$ and diagonal BD bisects $\angle B$ as well as $\angle D$.



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8. ABCD is a rectangle in which diagonals AC bisects $\angle A$ as well as $\angle C$, Show that

ABCD is a square

diagonal BD bisects $\angle B$ as well as $\angle D$

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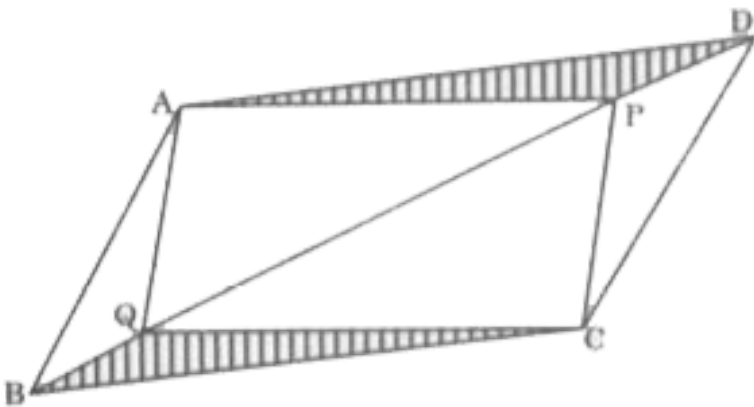
9. In parallelogram ABCD two points P and Q are taken on diagonal BD such that $DP=BQ$ show that

$$\triangle APD \approx \triangle CQB$$

$$\triangle AQB \approx \triangle CPD$$

$$AQ=CP$$

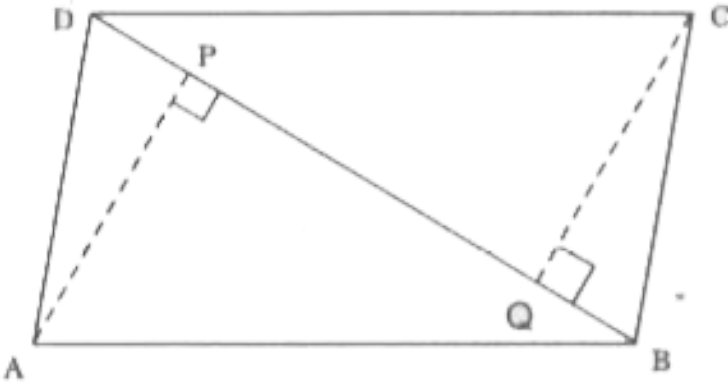
APCQ is a parallelogram



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10. ABCD is a parallelogram and AP and CQ are perpendicular from vertices A and C on diagonal BD. Show that

$$\triangle APB \approx \triangle CQD$$



$$AP=CQ$$

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11. In $\triangle ABC$ and $\triangle DEF$, $AB = DE$, $AB \parallel DE$, $BC = EF$ and $BC \parallel EF$. Vertices A, B and C are joined to vertices D, E and F respectively show that

quadrilateral ABED is a parallelogram

quadrilateral BEFC is a parallelogram

$AD \parallel CF$ and $AD = CF$

quadrilateral ACFD is a parallelogram

$AC = DF$

$\triangle ABC \approx \triangle DEF$.



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12. ABCD is a trapezium in which $AB \parallel CD$ and $AD = BC$

Show that

$\angle A = \angle B$

$\angle C = \angle D$

$\triangle ABC \approx \triangle BAD$

diagonal AC = diagonal BD



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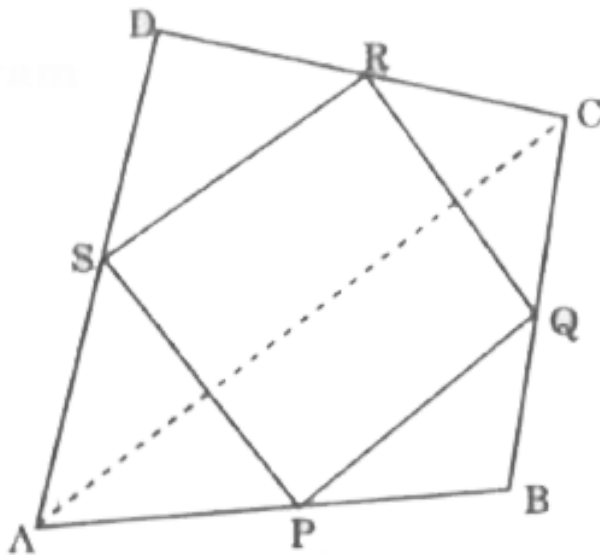
Exercise 7 2

1. ABCD is a quadrilateral in which P,Q,R and S are mid points of the sides AB,BC,CD and DA. AC is a diagonal Show that:

$$SR \parallel AC \text{ and } SR = \frac{1}{2}AC$$

$$PQ=SR$$

PQRS is a parallelogram



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2. ABCD is a rhombus and P,Q,R and S are the mid points of the sides AB,BC,CD and DA. Show that the quadrilateral PQRS is a rectangle.

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3. ABCD is a rectangle and P,Q,R and S are the mid points of the sides AB,BC,CD and DA respectively. Show that the quadrilateral PQRS is a rhombus.

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4. ABCD is a trapezium in which $AB \parallel DC$, BD is a diagonal and E is the mid point of AD. A line is drawn through E parallel to AB intersecting BC at F. Show that F is the mid point of BC.

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5. In a parallelogram ABCD, E and F are the mid points of sides AB and CD respectively (see fig.) Show that the line segments AF and EC trisect the diagonal BD.



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6. Show that the line segments joining the mid points of the opposite sides of a quadrilateral bisect each other.



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7. ABC is a triangle right angled at C. A line through the mid point M of hypotenuse AB and parallel to BC intersects AC at D. Show that

D is the mid point of AC

$$MD \perp AC$$

$$CM = MA = \frac{1}{2}AB$$



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