MATHS

BOOKS - KALYANI PUBLICATION

GEOMETRY

Example

1. $\triangle PBC$ and $\triangle QBC$ are two isosceles triangles on the same side of the some base. Show that the PQ is the right bisector of BC.

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2. The diagonals of a quadrilateral bisects each other at right angles. Show that the quadrilateral is a rhombus.

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3. In the triangle ABC, the bisector of $\angle A$ intersects BC at X. XL and XM are

perpendiculars from X on AB and AC respectively. Prove that $AL = AM$.

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4. If the perpendicular distance from the centroid of an equilateral triangle to one of its sides is 'a' find

the length of its side

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5. If the perpendicular distance from the centroid of an equilateral triangle to one of its sides is 'a' find

the length of its side

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6. If the perpendicular distance from the centroid of an equilateral triangle to one of its sides is 'a' find

the length of the radius of the inscribed circle

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7. If the perpendicular distance from the centroid of an equilateral triangle to one of its sides is 'a' find

the length of the radius of the circumscribed circle.

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Exercise

1. l is the perpendicular bisector of the line segment PQ and R is a point on the some side of l as P. The line segment QR intersects l at X. Prove that $PX + XR = QR$.

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2. Prove that the locus of the centres of all circles passing through two given points A, B is the perpendicular bisector of the line segment AB.

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3. A and D are two points on the perpendicular bisector of BC lying on the same side of BC. Prove that $\angle ABD = \angle ACD$.

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4. $\angle PBC$, $\angle QBC$, $\angle RBC$ are three isosceles triangles on the same base BC. Show that P, Q, R are collinear.

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5. The right bisector of AB and AC of the triangle ABC intersect at 0. Prove that $OA = OB = OC$.

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6. Prove that the bisectors of the opposite angles of a parallelogram are parallel.

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7. The distance of the centroid from a vertex of an equilateral triangle is 4 cm. Find the length of the sides.

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8. Assuming the validity of the statement that the internal bisectors of the angles of a triangle are concurrent, prove that the altitudes of a triangle are concurrent.

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9. If the measures of the medians of a triangle are equal then prove that the triangle is equilateral.

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10. Prove that the Pedal triangle of an equilateral triangle is also an equilateral triangle.

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