MATHS

NCERT - NCERT MATHEMATICS(ENGLISH)

NCERT THEOREMS

Theorem 5 1

1. Two distinct .... in a plane cannot have more than one point in common.

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Theorem 6 1

1. If two lines intersect prove that the vertically opposite angles are equal

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Theorem 6 2

1. Theorem 6.2 : If a transversal intersects two parallel lines, then each pair of alternate interior angles is equal.

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Theorem 6 3

1. Theorem 6.3 : If a transversal intersects two lines such that a pair of alternate interior angles is equal, then the two lines are parallel.

Theorem 6 4

1. Theorem 6.4 : If a transversal intersects two parallel lines, then each pair of interior angles on the same side of the transversal is supplementary.

Theorem 6 5

1. Theorem 6.5 : If a transversal intersects two lines such that a pair of interior angles on the same side of the transversal is supplementary, then the two lines are parallel.

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Theorem 6 6

1. Theorem 6.6 : Lines which are parallel to the same line are parallel to each other.

Theorem 6 7

1. Prove that the sum of the three angles of a triangle is 180^0.

Theorem 6 8

1. (Exterior Angle Theorem): If a side of a triangle is produced, the exterior angle so formed is equal to the sum of the two interior opposite angles. GIVEN : A triangle ABC, D is a point of BC produced, forming exterior angle $\angle 4$. TO PROVE : $\angle 4 = \angle 1 + \angle 2$ i.e. , $\angle ACD = \angle CAB + \angle CBA$.

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Theorem 7 1

1. Angle-Side-Angle (ASA) Congruence - Two triangles are congruent if two angles and the included side of one triangle are equal to the corresponding two angles and the included side of the other triangle.

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Theorem 7 2

1. Theorem 7.2 : Angles opposite to equal sides of an isosceles triangle are equal.

Theorem 7 3

1. Theorem 7.3 : The sides opposite to equal angles of a triangle are equal.

Theorem 7 4

1. Theorem 7.4 (SSS congruence rule) : If three sides of one triangle are equal to the three sides of another triangle, then the two triangles are congruent.

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Theorem 7 5

1. Prove that Two right triangles are congruent if the hypotenuse and one side of one triangle

are respectively equal to the hypotenuse and one side of the other triangle.

Theorem 7 6

1. Theorem 7.6 : If two sides of a triangle are unequal, the angle opposite to the longer side is larger (or greater)

Theorem 7 7

1. Theorem 7.7 : In any triangle, the side opposite to the larger (greater) angle is longer

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Theorem 7 8

1. Theorem 7.8 : The sum of any two sides of a triangle is greater than the third side.

Theorem 8 1

1. A diagonal of parallelogram divides it into two congruent triangles.

Theorem 8 2

1. In a parallelogram, opposite side are equal

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Theorem 8 3

1. Theorem 8.3 : If each pair of opposite sides of a quadrilateral is equal, then it is a parallelogram.

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1. In a parallelogram, opposite side are equal

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1. Theorem 8.5 : If in a quadrilateral, each pair of opposite angles is equal, then it is a parallelogram.

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Theorem 8 6

1. The diagonals of a parallelogram bisect each other.

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Theorem 8 7

1. If the diagonals of a quadrilateral bisect each other, then the quadrilateral is a parallelogram.

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Theorem 8 8

1. A quadrilateral is a parallelogram, if its one pair of opposite sides are equal and parallel.

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1. Prove that the line joining the mid-points of the two sides of a triangle is parallel to the third side.

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1. Theorem 8.10 : The line drawn through the mid-point of one side of a triangle, parallel to another side bisects the third side.

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Theorem 9 1

1. Prove that Parallelograms on the same base and between the same parallels are equal in area.

Theorem 9 2

1. Triangles on the same base and between the same parallels are equal in area.

Theorem 9 3

1. Prove that two triangles having the same base and equal areas lie between the same parallels.

Theorem 10 1

1. Prove Equal chords of a circle subtend equal angles at the centre.

1. If the angles subtended by two chords of a circle at the centre are equal, then Prove chords are equal.

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1. The perpendicular from the centre of a circle to a chord bisects the chord.

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Theorem 10 4

1. (Converse of Theorem 3) The line joining the centre of a circle to the mid-point of a chord is perpendicular to the chord.

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1. Statement 1 : The differential equation of all circles in a plane must be of order 3.

Statement 2 : There is only one circle passing through three non-collinear points.

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1. Equal chords of congruent circles are equidistant from the corresponding centres.

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Theorem 10 7

1. Chords of a circle which are equidistant from the centre are equal.

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1. Theorem 10.8 : The angle subtended by an arc at the centre is double the angle subtended by it at any point on the remaining part of the circle.

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1. Prove that angle in the same segment of a circle are equal.

Theorem 10 10

1. Theorem:- If the line segment joining two points subtends equal angles at two other points lying on the same side of the line

segment; the four points are concyclic. i.e lie on the same circle.

Theorem 10 11

1. Theorem 10.11 : The sum of either pair of opposite angles of a cyclic quadrilateral is 180 .

1. If the sum of any pair of opposite angles of a quadrilateral is $180^0,$ then the quadrilateral is cyclic.

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