

**BOARDS CONCEPTS BOOSTER** 

**VISUALISING SOLID SHAPES** 

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	CONCEPT FOR BOARDS    Chapter VISUALISING SOLID SHAPES
	1. CURVES
1	1. Curvea plane figure formed by joining a number of points without lifting a pencil from the paper and without retracing any portion of the drawing other than single points is called a curve.
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	1. INTRODUCTION
2	1. Introduction
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3	1. CURVES
	2. Open curve is a curve which does not cut itself is called an open curve .
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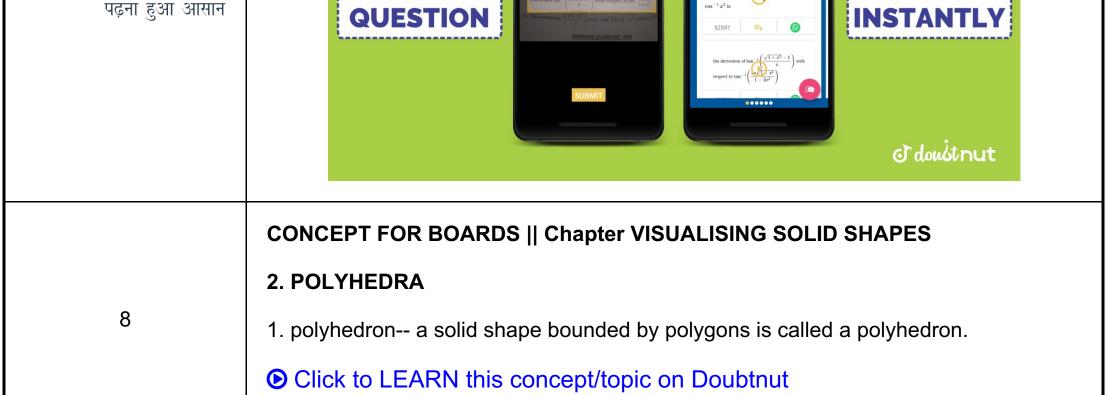
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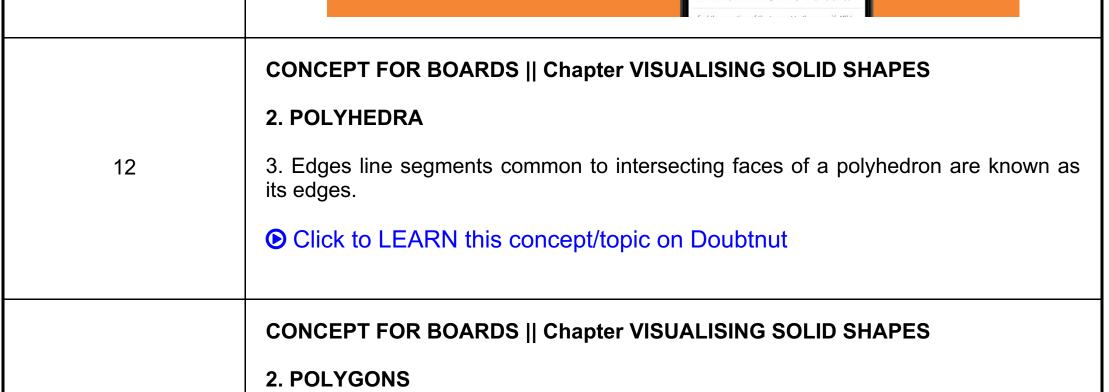


## **CONCEPT FOR BOARDS || Chapter VISUALISING SOLID SHAPES**

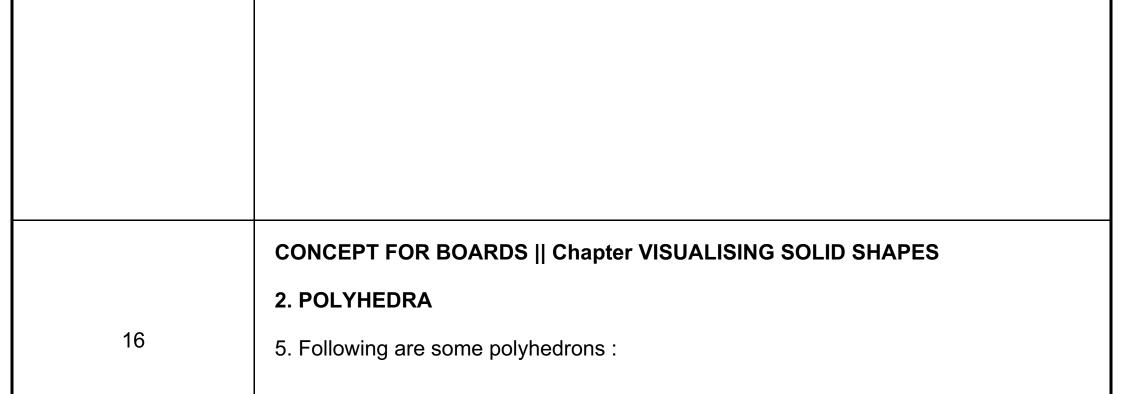
4	1. CURVES
	3. Closed curves a curve which cuts itself is called a closed curve.
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	1. CURVES
5	4. Simple closed curve a closed curve is called a simple closed curve if it does not pass through one point more than once.
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	1. CURVES
6	5. Position of a point with respect to a curve.
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	2. POLYGONS
7	1. Polygons a polygon is a closed curve (figure)formed by the line segments such that : (i)no two line segments intersect except at their end -points.(ii)no two line segments with a common end points are coincident.
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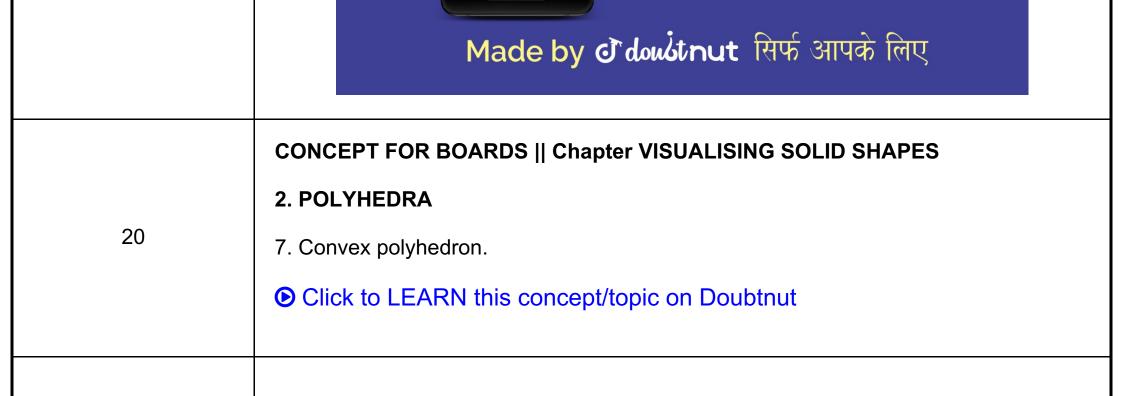
9	<ul> <li>CONCEPT FOR BOARDS    Chapter VISUALISING SOLID SHAPES</li> <li>2. POLYGONS</li> <li>2. Polygons are classified according to the number of sides.</li> <li>Olick to LEARN this concept/topic on Doubtnut</li> </ul>
10	<ul> <li>CONCEPT FOR BOARDS    Chapter VISUALISING SOLID SHAPES</li> <li>2. POLYHEDRA</li> <li>2. Faces polygons forming a polyhedron are known as its faces.</li> <li>Olick to LEARN this concept/topic on Doubtnut</li> </ul>
11	<ul> <li>CONCEPT FOR BOARDS    Chapter VISUALISING SOLID SHAPES</li> <li>2. POLYGONS</li> <li>3. Adjacent sides any two sides with a common endpoint(vertex)are called the adjacent sides of the polygon.</li> <li>Click to LEARN this concept/topic on Doubtnut</li> </ul>
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13	<ul> <li>4. Adjacent vertices the end-points of the same side of a polygon are known as the adjacent vertices.</li> <li>Click to LEARN this concept/topic on Doubtnut</li> </ul>
14	<ul> <li>CONCEPT FOR BOARDS    Chapter VISUALISING SOLID SHAPES</li> <li>2. POLYHEDRA</li> <li>4. Vertices points of intersection of edges of a polyhedron are known as its vertices.</li> <li>Click to LEARN this concept/topic on Doubtnut</li> </ul>
15	<ul> <li>CONCEPT FOR BOARDS    Chapter VISUALISING SOLID SHAPES</li> <li>2. POLYGONS</li> <li>5. DIAGONALS The line segments obtained by joining vertices which are are not adjacents are called the diagonals of the polygon.</li> <li>Click to LEARN this concept/topic on Doubtnut</li> </ul>
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17	<ul> <li>CONCEPT FOR BOARDS    Chapter VISUALISING SOLID SHAPES</li> <li>2. POLYGONS</li> <li>6. Convex polygon a polygon is a convex polygon if the line segment joining any two points inside it lies completely inside the polygon.</li> <li>Click to LEARN this concept/topic on Doubtnut</li> </ul>
18	<ul> <li>CONCEPT FOR BOARDS    Chapter VISUALISING SOLID SHAPES</li> <li>2. POLYHEDRA</li> <li>6. Regular polyhedron .</li> <li>O Click to LEARN this concept/topic on Doubtnut</li> </ul>
19	CONCEPT FOR BOARDS    Chapter VISUALISING SOLID SHAPES 2. POLYGONS 7. N-sides of a convex polygons and $n > 3$ then it has $\frac{n(n-3)}{2}$ diagonals. © Click to LEARN this concept/topic on Doubtnut
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21	2. POLYGONS
	<ul> <li>2. POLYGONS</li> <li>8. Regular polygon a polygon is called a regular polygon if all its sides are equal and all its angles are equal.</li> <li>Click to LEARN this concept/topic on Doubtnut</li> </ul>
	CONCEPT FOR BOARDS    Chapter VISUALISING SOLID SHAPES
00	3. QUADRILATERALS
22	1. Introduction
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	CONCEPT FOR BOARDS    Chapter VISUALISING SOLID SHAPES
	3. PRISMS
23	1. Prisms a prism is a solid whose side faces are parallelograms and whose ends(or bases) are congruent parallel rectilinear figures.
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 24
 3. QUADRILATERALS

 24
 2. Definition let ABC and D be four points is in a plane such that : (i)no three of them are collinear (ii) the line segments ABBCCD and DA do not intersect except at their and points.

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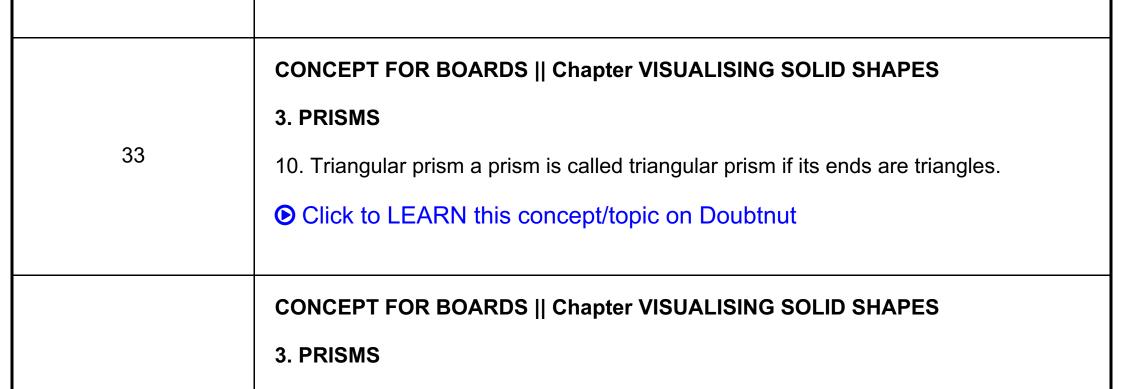
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 3. PRISMS

25	<ul> <li>2. Base of a prism the end on which a prism may be supposed to stand is called the base of the prism.</li> <li>Click to LEARN this concept/topic on Doubtnut</li> </ul>
26	<ul> <li>CONCEPT FOR BOARDS    Chapter VISUALISING SOLID SHAPES</li> <li>3. PRISMS</li> <li>3. Height of a prism the perpendicular distance the ends of a prism is called the height of the prism.</li> <li>Click to LEARN this concept/topic on Doubtnut</li> </ul>
27	<ul> <li>CONCEPT FOR BOARDS    Chapter VISUALISING SOLID SHAPES</li> <li>3. PRISMS</li> <li>4. Axis of a prism the straight line joining the centres of the ends of a prism is called the axis of the prism.</li> <li>Click to LEARN this concept/topic on Doubtnut</li> </ul>
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	CONCEPT FOR BOARDS    Chapter VISUALISING SOLID SHAPES
	3. PRISMS

28	<ul> <li>5. Length of a prism the length of a prism is the portion of the axis that lies between the parallel ends.</li> <li>Click to LEARN this concept/topic on Doubtnut</li> </ul>
	CONCEPT FOR BOARDS    Chapter VISUALISING SOLID SHAPES
	3. PRISMS
29	6. Lateral faces all faces other than the bases of a prism are known as its lateral faces.
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	3. PRISMS
30	7. Lateral edges the line of intersection of the lateral faces of a prism are called the lateral edges of the prism.
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	CONCEPT FOR BOARDS    Chapter VISUALISING SOLID SHAPES
	3. PRISMS
31	8. Regular prism a prism is called a regular prism if ends are regular polygons.
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	CONCEPT FOR BOARDS    Chapter VISUALISING SOLID SHAPES
	3. PRISMS
32	9. Right prism a prism is called a right prism if its lateral edges are perpendicular to its ends (bases). Otherwise it is said to be an oblique prism.
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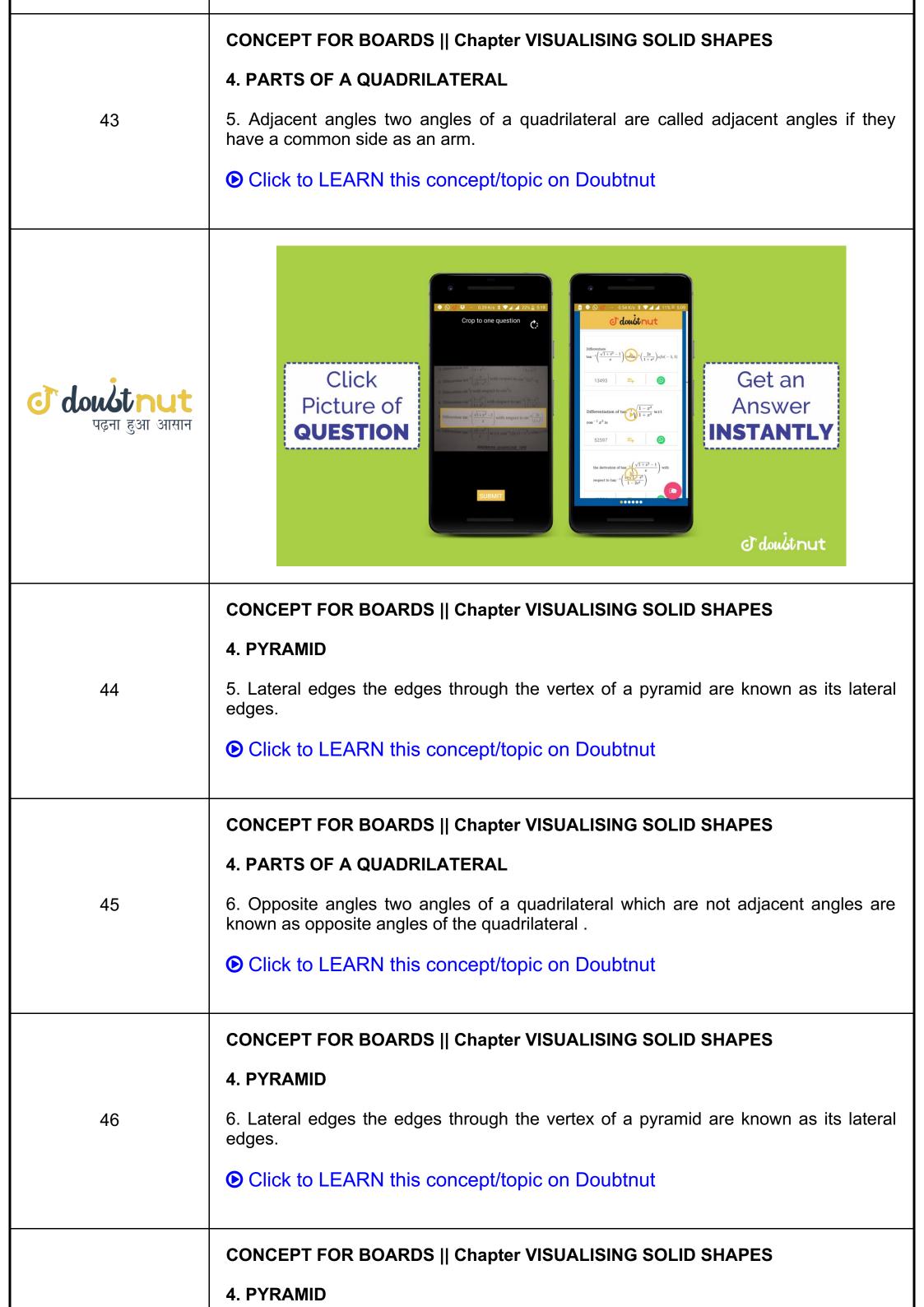


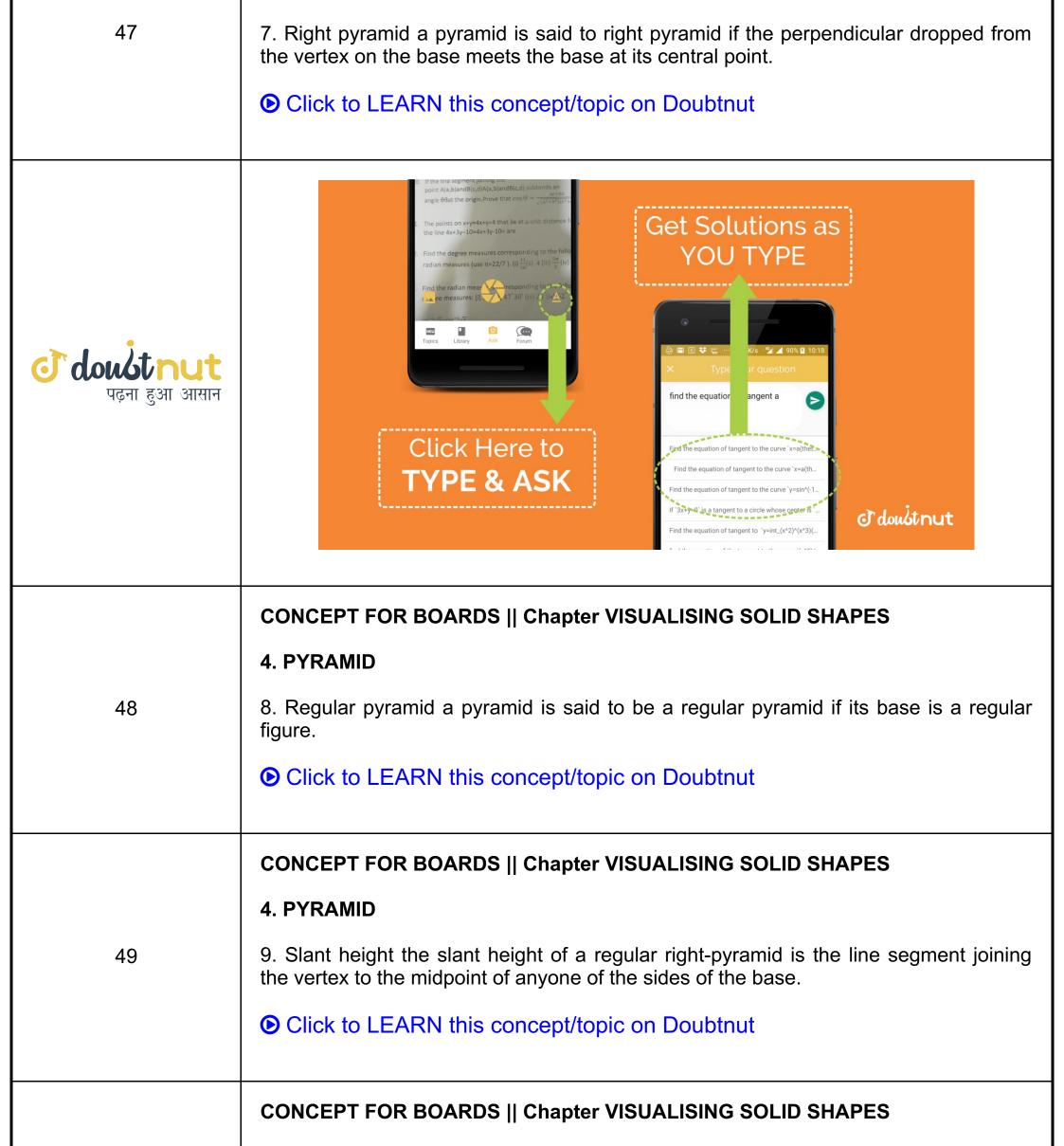
34	<ul> <li>11. Right triangular prism a right prism is called a right triangular prism if its ends are triangles.</li> <li>Olick to LEARN this concept/topic on Doubtnut</li> </ul>
35	<ul> <li>CONCEPT FOR BOARDS    Chapter VISUALISING SOLID SHAPES</li> <li>4. PARTS OF A QUADRILATERAL</li> <li>1. Sides in a quadrilateral ABCD the four line segments ABBC.CD and DA are called its sides.</li> <li>Click to LEARN this concept/topic on Doubtnut</li> </ul>
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36	<ul> <li>CONCEPT FOR BOARDS    Chapter VISUALISING SOLID SHAPES</li> <li>4. PYRAMID</li> <li>1. Pyramid a pyramid is a solid whose base is a plane rectilinear figure and whose side-faces are triangles having a common vertex outside the plane of the base.</li> <li>Click to LEARN this concept/topic on Doubtnut</li> </ul>
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	4. PARTS OF A QUADRILATERAL
37	2. Adjacent sides two sides of a quadrilateral are called its adjacent sides if they have a common endpoint.
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	4. PYRAMID
38	2. Vertex the common vertex of the triangular faces of a pyramid is called the vertex of the pyramid.

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39	<ul> <li>CONCEPT FOR BOARDS    Chapter VISUALISING SOLID SHAPES</li> <li>4. PARTS OF A QUADRILATERAL</li> <li>3. Opposite sides two sides of a quadrilateral are called its opposite sides if they do not have a common endpoint.</li> <li>Click to LEARN this concept/topic on Doubtnut</li> </ul>
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40	<ul> <li>CONCEPT FOR BOARDS    Chapter VISUALISING SOLID SHAPES</li> <li>4. PYRAMID</li> <li>3. Height the height of a pyramid is the length of the perpendicular from the vertex to the base.</li> <li>Click to LEARN this concept/topic on Doubtnut</li> </ul>
41	CONCEPT FOR BOARDS    Chapter VISUALISING SOLID SHAPES 4. PARTS OF A QUADRILATERAL 4. Diagonals in the guadrilateral ABCD the line segments AC and BD are called its

41	<ul> <li>4. Diagonals in the quadrilateral ABCD the line segments AC and BD are called its diagonals.</li> <li>Click to LEARN this concept/topic on Doubtnut</li> </ul>
	CONCEPT FOR BOARDS    Chapter VISUALISING SOLID SHAPES 4. PYRAMID
42	4. Axis the axis of a pyramid is the straight line joining the vertex to the central point of the base.
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10. Triangular pyramid a pyramid is called a triangular pyramid if its base is a triangle .

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#### 4. PYRAMID

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11. Quadrilateral pyramid a pyramid is called a quadrilateral pyramid if its base is a quadrilateral.

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52	<ul> <li>CONCEPT FOR BOARDS    Chapter VISUALISING SOLID SHAPES</li> <li>5. REGIONS IN A QUADRILATERAL</li> <li>1. Interior and exterior of a quadrilateral</li> <li>Click to LEARN this concept/topic on Doubtnut</li> </ul>
53	<ul> <li>CONCEPT FOR BOARDS    Chapter VISUALISING SOLID SHAPES</li> <li>6. CONVEX QUADRILATERAL</li> <li>1. Definition a polygon is called a convex polygon if the line containing any side of the polygon has the remaining vertices on the same side of it.</li> <li>Click to LEARN this concept/topic on Doubtnut</li> </ul>
54	<ul> <li>CONCEPT FOR BOARDS    Chapter VISUALISING SOLID SHAPES</li> <li>6. CONVEX QUADRILATERAL</li> <li>2. In a convex quadrilateral the line segment joining any two points in its interior lies completely in its interior.</li> </ul>

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55	CONCEPT FOR BOARDS    Chapter VISUALISING SOLID SHAPES
	7. INTERIOR ANGLE SUM PROPERTY
	1. Theorem 1 the sum of the angles of a quadrilateral is $360^\circ$ or 4 right angles.
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56	<ul> <li>CONCEPT FOR BOARDS    Chapter VISUALISING SOLID SHAPES</li> <li>7. INTERIOR ANGLE SUM PROPERTY</li> <li>2. Theorem 2 prove that the sum of the interior angles of pentagon is 540°.</li> <li>Click to LEARN this concept/topic on Doubtnut</li> </ul>
57	<ul> <li>CONCEPT FOR BOARDS    Chapter VISUALISING SOLID SHAPES</li> <li>7. INTERIOR ANGLE SUM PROPERTY</li> <li>3. Theorem 3 thu sum of all angles of a hexagon is 720°.</li> <li>Click to LEARN this concept/topic on Doubtnut</li> </ul>
58	<b>CONCEPT FOR BOARDS    Chapter VISUALISING SOLID SHAPES</b> <b>7. INTERIOR ANGLE SUM PROPERTY</b> 4. Definition If $x$ and $a$ are two rational numbers such that $x^3 = a$ then we say that $x$ is the cube root of a and we write $3\sqrt{a} = x$ . $\bigcirc$ Click to LEARN this concept/topic on Doubtnut

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# 7. INTERIOR ANGLE SUM PROPERTY

5. Remark 2 if there is a regular polygon of n sides  $(n \ge 3)$  then its each interior angle is equal to  $\left(\frac{2n-4}{n}\right)$  right angles i.e.`((2 n-4)/(n)x 90).

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60	<ul> <li>CONCEPT FOR BOARDS    Chapter VISUALISING SOLID SHAPES</li> <li>8. EXTERIOR ANGLE PROPERTY</li> <li>1. theorem 1 (Exterior angle sum property) if the sides of quadrilateral are produced in order the sum of four exterior angles so formed is 360°.</li> <li>Click to LEARN this concept/topic on Doubtnut</li> </ul>
61	<ul> <li>CONCEPT FOR BOARDS    Chapter VISUALISING SOLID SHAPES</li> <li>8. EXTERIOR ANGLE PROPERTY</li> <li>3. How many sides has a regular polygon,each angle of which is of measure-156° and 108°</li> <li>Click to LEARN this concept/topic on Doubtnut</li> </ul>
62	CONCEPT FOR BOARDS    Chapter VISUALISING SOLID SHAPES 9. VARIOUS TYPES OF QUADRILATERALS. 1. Introduction Click to LEARN this concept/topic on Doubtnut

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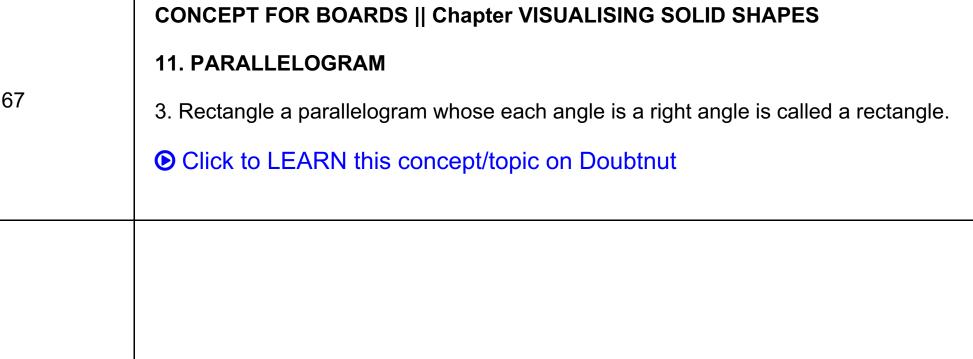
## 10. TRAPEZIUM

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1. Trapezium a quadrilateral having exactly one pair of parallel sides is called a trapezium.

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64	<ul> <li>CONCEPT FOR BOARDS    Chapter VISUALISING SOLID SHAPES</li> <li>10. TRAPEZIUM</li> <li>2. Isosceles trapezium a trapezium is said to be an isosceles trapezium if its non-parallel sides are equal.</li> <li>Click to LEARN this concept/topic on Doubtnut</li> </ul>
65	<ul> <li>CONCEPT FOR BOARDS    Chapter VISUALISING SOLID SHAPES</li> <li>11. PARALLELOGRAM</li> <li>1. Parallelogram a quadrilateral is a parallelogram if its both pairs of opposite sides are parallel.</li> <li>Click to LEARN this concept/topic on Doubtnut</li> </ul>
66	<ul> <li>CONCEPT FOR BOARDS    Chapter VISUALISING SOLID SHAPES</li> <li>11. PARALLELOGRAM</li> <li>2. Rhombus a parallelogram having all sides equal is called a rhombus.</li> <li>Olick to LEARN this concept/topic on Doubtnut</li> </ul>



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68	<ul> <li>CONCEPT FOR BOARDS    Chapter VISUALISING SOLID SHAPES</li> <li>11. PARALLELOGRAM</li> <li>4. Square a square is a rectangle with a pair of equal adjacent sides.</li> <li>Click to LEARN this concept/topic on Doubtnut</li> <li>CONCEPT FOR BOARDS    Chapter VISUALISING SOLID SHAPES</li> <li>11. PARALLELOGRAM</li> <li>5. Kite a quadrilateral is a kite if it has two pairs of equal adjacent sides and unequal opposite sides.</li> <li>Click to LEARN this concept/topic on Doubtnut</li> </ul>
70	<ul> <li>CONCEPT FOR BOARDS    Chapter VISUALISING SOLID SHAPES</li> <li>12. PROPERTIES OF A PARALLELOGRAM</li> <li>1. Theorem in a parallelogram prove that (i)the opposite sides are equal; (ii) the opposite angles are equal ;(iii) diagonals bisect each other.</li> <li>Click to LEARN this concept/topic on Doubtnut</li> </ul>

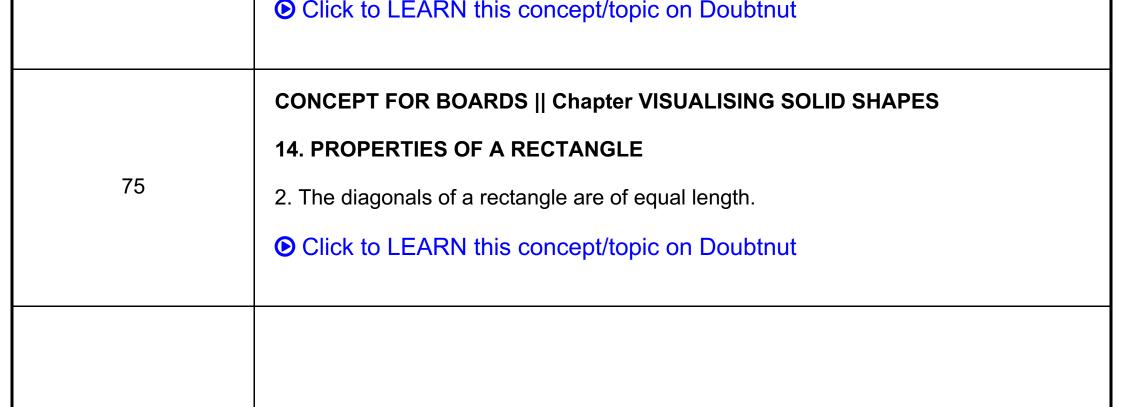
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### **12. PROPERTIES OF A PARALLELOGRAM**

2. The converse of the above properties are also true i.e.(i) A quadrilateral is a parallelogram if its opposite sides are equal.(ii)A quadrilateral is a parallelogram if its opposite angles are equal.(iii) A quadrilateral is a parallelogram if it has one pair of opposite sides parallel and equal.(iv) A quadrilateral is a parallelogram if its diagonals bisect each other .

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72	<ul> <li>CONCEPT FOR BOARDS    Chapter VISUALISING SOLID SHAPES</li> <li>13. PROPERTIES OF A RHOMBUS</li> <li>1. Theorem(Diagonal property of a rhombus) the diagonals of a rhombus bisect each other at right angles.</li> <li>Click to LEARN this concept/topic on Doubtnut</li> </ul>
73	<ul> <li>CONCEPT FOR BOARDS    Chapter VISUALISING SOLID SHAPES</li> <li>13. PROPERTIES OF A RHOMBUS</li> <li>2. The properties of a rhombus can be summarized as under : (i) All the sides of a rhombus are equal.(ii) The opposite angles of a rhombus are equal. (iii) The adjacent angles of a rhombus are supplementary. (iv) The diagonals of a rhombus bisect each other at right angles.</li> <li>Click to LEARN this concept/topic on Doubtnut</li> </ul>
74	<ul> <li>CONCEPT FOR BOARDS    Chapter VISUALISING SOLID SHAPES</li> <li>14. PROPERTIES OF A RECTANGLE</li> <li>1. Property 1 each angle of a rectangle is a right angle.</li> <li>Click to LEARN this concept/topic on Doubtnut</li> </ul>



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77	<b>CONCEPT FOR BOARDS    Chapter VISUALISING SOLID SHAPES</b> <b>16. PROPERTIES OF A TRAPEZIUN</b> 1. Trapezium as a quadrilateral having exactly one pair of parallel sides. Therefore if ABCD is a trapezium in which $AB     DC$ . Then $(i) \angle B + \angle C$ $= 180^{\circ}(ii) \angle A + \angle D = 180^{\circ}$ Click to LEARN this concept/topic on Doubtnut
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