Dihedral Angle: is formed by the union of polygonal regions in space that share an edge. The polygonal regions forming the dihedral angle are called faces of the dihedral angle.

- We measure dihedral angles by measuring the angle between two line segments or rays contained in the faces.

POLYHEDRON: is the union of polygonal regions, any two of which have at most a side in common, such that a connected finite region in space is enclosed without holes. (Note: the plural of polyhedron is polyhedra.)

- The polygonal regions of the polyhedron are called the faces.
- The line segments common to a pair of faces are called edges.
- The points of intersection of the edges are called vertices.

Convex Polyhedron: is a polyhedron in which every line segment joining two of its points is contained inside the polyhedron or is on one of the polygonal regions.
TYPES OF POLYHEDRA:

1. **Prisms:** are polyhedra with two opposite faces that are identical polygons. The identical faces are called bases and the vertices of the bases are joined to form the lateral sides which must be parallelograms.
   - If the lateral faces are rectangles, the prism is called a **right prism**.
   - If the lateral faces are not rectangles, the prism is called an **oblique prism**.
   - Prisms are named according to the type of polygons forming the bases and whether they are right or oblique.

2. **Pyramids:** are polyhedra formed by using a polygon for the base and a point not in the plane of the base (called the apex) that is connected with line segments to each vertex of the base.
   - Pyramids whose bases are regular polygons and whose lateral faces are isosceles triangles are called **right regular pyramids**. They are named according to the base.
   - Pyramids whose bases are regular polygons and whose lateral side are NOT isosceles triangles are called **oblique regular pyramids**.

3. **Regular Polyhedron:** is one in which all faces are identical regular polygonal regions and all dihedral angles have the same measure. (Note: there are exactly 5 regular polyhedra called the **Platonic Solids**.)

4. **Semiregular Polyhedron:** is one with several different regular polygonal regions for faces but with the same arrangement of polygons at each vertex.
CURVED SHAPES IN THREE DIMENSION:

1. **Circular Cylinder:** is a simple closed surface that is bounded by two congruent circles that lie in parallel planes.
   - In a **right cylinder** a line segment $\overline{AB}$ connecting a point $A$ on one circular base to its corresponding point $B$ on the other circular base is perpendicular to the planes of the bases.
   - In an **oblique cylinder** the bases are parallel, but the line segments connecting corresponding points are not perpendicular to the planes of the bases.

2. **Circular Cone:** is a union of the interior of a simple closed point and all line segments joining the curve to a point (called the **apex**) that is not in the plane of the curve.
   - In a **right circular cone** the line segment joining the apex and the center of the circular base is perpendicular to the plane of the base.
   - In a **oblique circular cone** this line segment is not perpendicular to the plane of the base.

3. **Sphere:** is the set of all points in three-dimensional space that are the same distance from a fixed point called the **center**. Any line segment joining the center to a point on the sphere is called the **radius**.