9.1 Solid Figures
Goal: To be able to identify and name solid figures

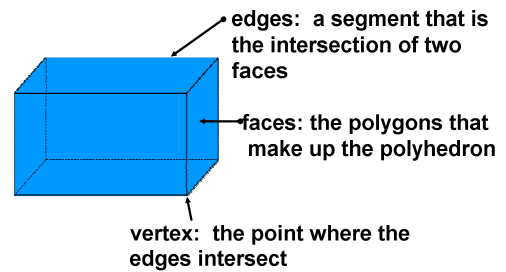**State the number of sides of each polygon.**

1. quadrilateral

2. heptagon
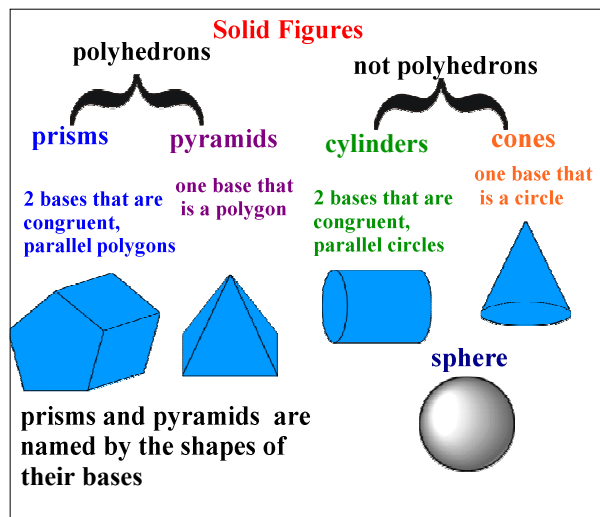
3. pentagon

4. octagon

5. hexagon

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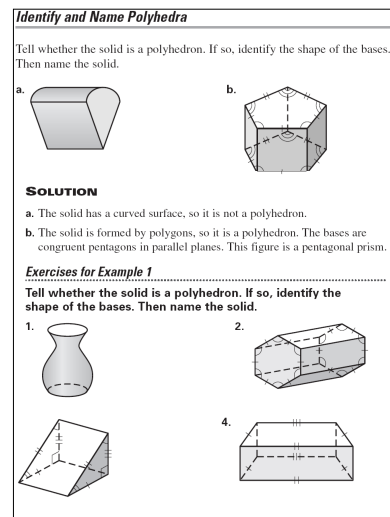
VOCABULARY

Three-dimensional shapes are called **solids**.

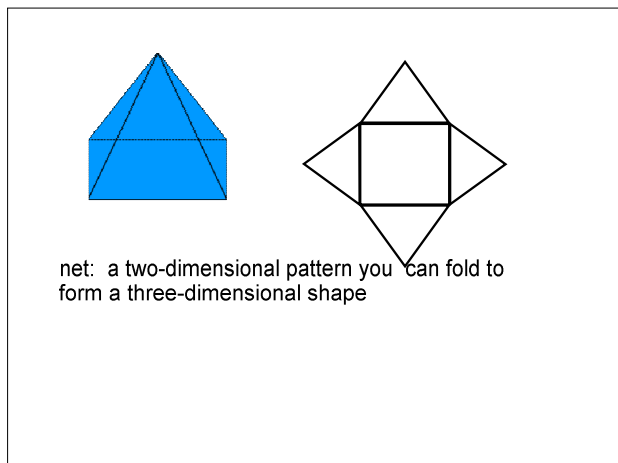When a solid is formed by polygons, the solid is called a **polyhedron**.

edges: a segment that is the intersection of two faces

faces: the polygons that make up the polyhedron

vertex: the point where the edges intersect

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Solid Figures

polyhedrons

not polyhedrons

prisms   **pyramids**   **cylinders**   **cones**

2 bases that are congruent, parallel polygons

one base that is a polygon

2 bases that are congruent, parallel circles

one base that is a circle

sphere

prisms and pyramids are named by the shapes of their bases

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Identify and Name Polyhedra

Tell whether the solid is a polyhedron. If so, identify the shape of the bases. Then name the solid.

a.   b.

SOLUTION

a. The solid has a curved surface, so it is not a polyhedron.

b. The solid is formed by polygons, so it is a polyhedron. The bases are congruent pentagons in parallel planes. This figure is a pentagonal prism.

Exercises for Example 1

Tell whether the solid is a polyhedron. If so, identify the shape of the bases. Then name the solid.

1.   2.

3.   4.

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net: a two-dimensional pattern you can fold to form a three-dimensional shape

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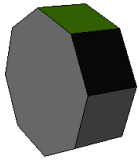| polyhedron	No. of faces	No. of vertices	No. of edges
Cube			
Triangular Pyramid			
Triangular prism			
Square Pyramid			
Rectangular Prism			

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Euler's Formula is true for all polyhedrons

$$F + V = E + 2$$

**How many vertices do the
following solids have?**

Octagonal Prism

10 faces, 24 edges

pentagonal pyramid

6 faces, 10 edges