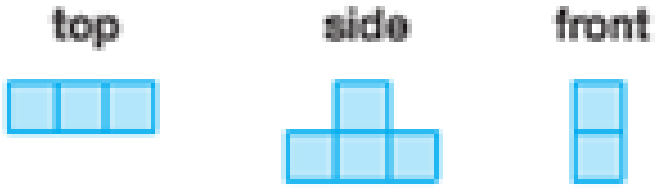
Lesson 7-5 & 7-6
Draw 3D Shapes & Cross Sections

Page 587 Example 4

Example

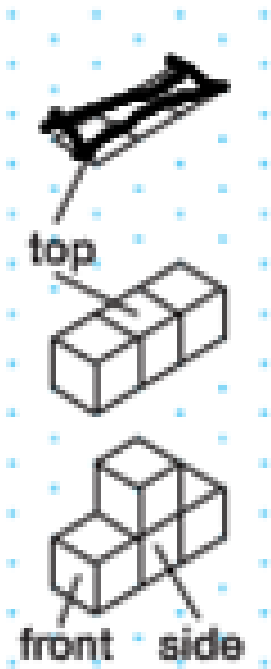
4. **Draw a corner view of the three-dimensional figure whose top, side, and front views are shown.**



Step 1 Use the top view to draw the base of the figure, a 1-by-3 rectangle.

Step 2 Add edges to make the base a solid figure.

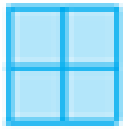
Step 3 Use the side and front views to complete the figure.



Got It? Do this problem to find out.

c. Draw a corner view of the three-dimensional figure whose top, side, and front views are shown.

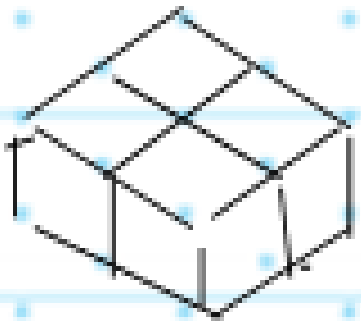
top



side

front

c.

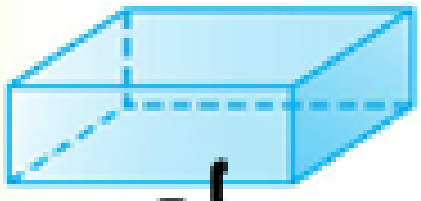


Cross Sections - page 593

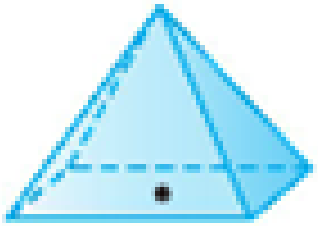
Vocabulary Start-Up

A **prism** is a three-dimensional figure with at least two parallel, congruent faces called **bases** that are polygons. A **pyramid** is a three-dimensional figure with one base that is a polygon. Its other faces are triangles.

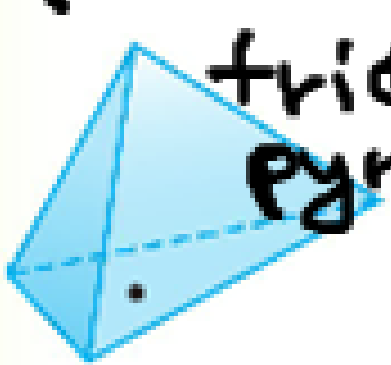
Write *prism* or *pyramid* on the line below each figure.



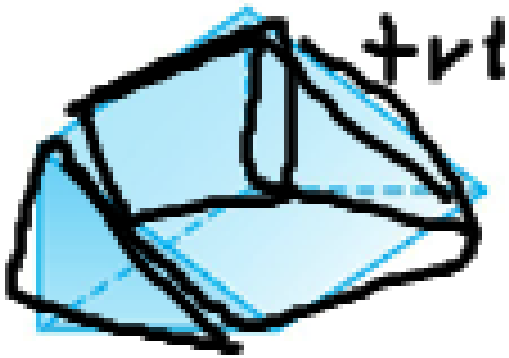
rectangular prism



square pyramid



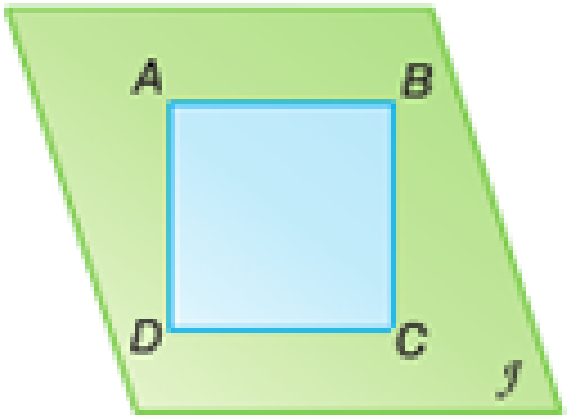
triangular pyramid



triangular prism

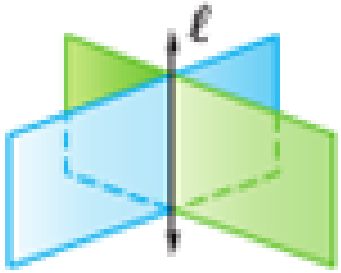
Identify Three-Dimensional Figures

A **plane** is a flat surface that goes on forever in all directions. The figure at the right shows rectangle *ABCD*. Line segments *AB* and *DC* are **coplanar** because they lie in the same plane. They are also **parallel** because they will never intersect, no matter how far they are extended.

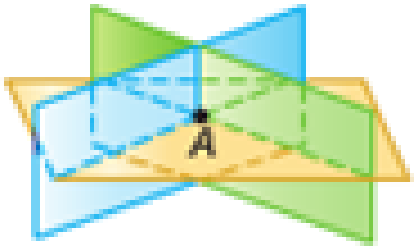


Just as two lines in a plane can intersect or be parallel, there are different ways that planes may be related in space.

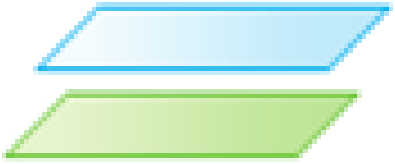
Intersect in a Line



Intersect at a Point



No Intersection



These are called *parallel planes*.

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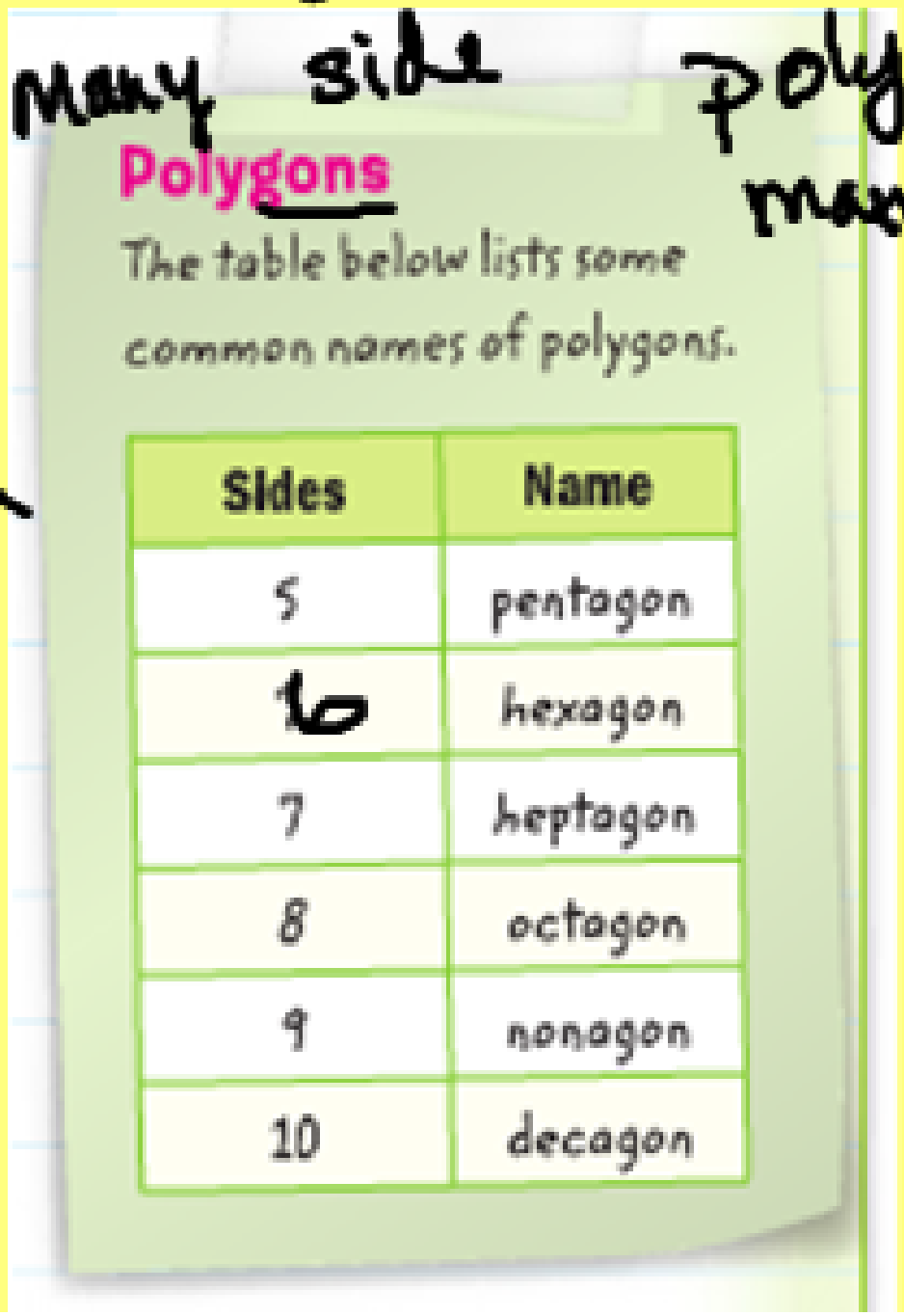

Polygons

The table below lists some common names of polygons.

Sides	Name
5	pentagon
6	hexagon
7	heptagon
8	octagon
9	nonagon
10	decagon

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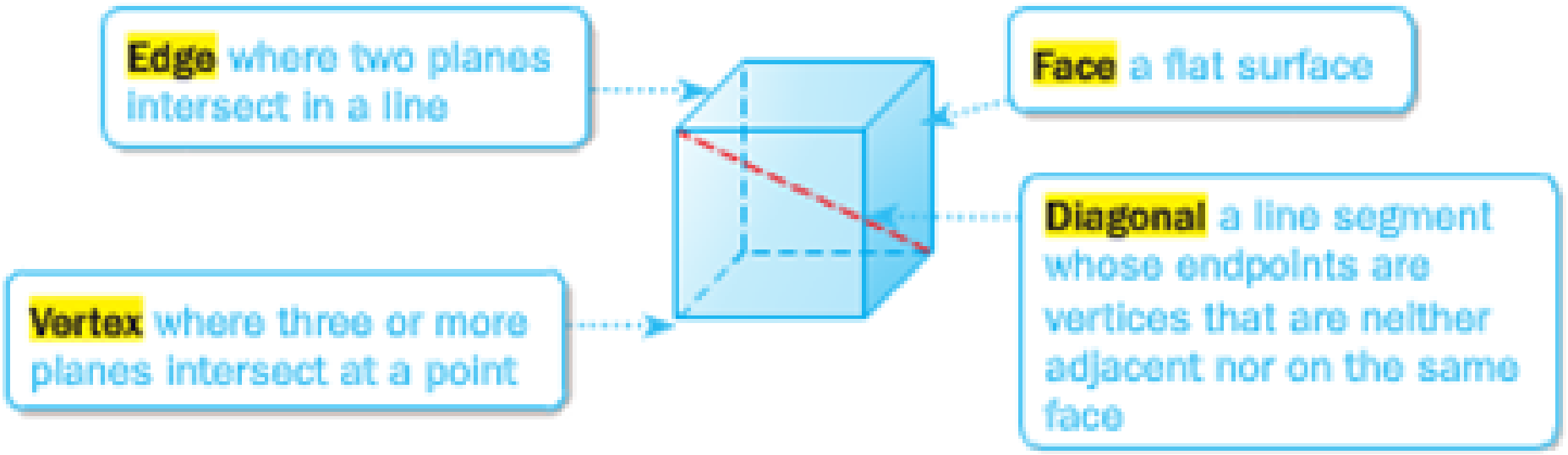
Intersecting planes can form three-dimensional figures. A **polyhedron** is a three-dimensional figure with flat surfaces that are polygons. Prisms and pyramids are both polyhedrons. Some terms associated with three-dimensional figures are *edge*, *face*, *vertex*, and *diagonal*.



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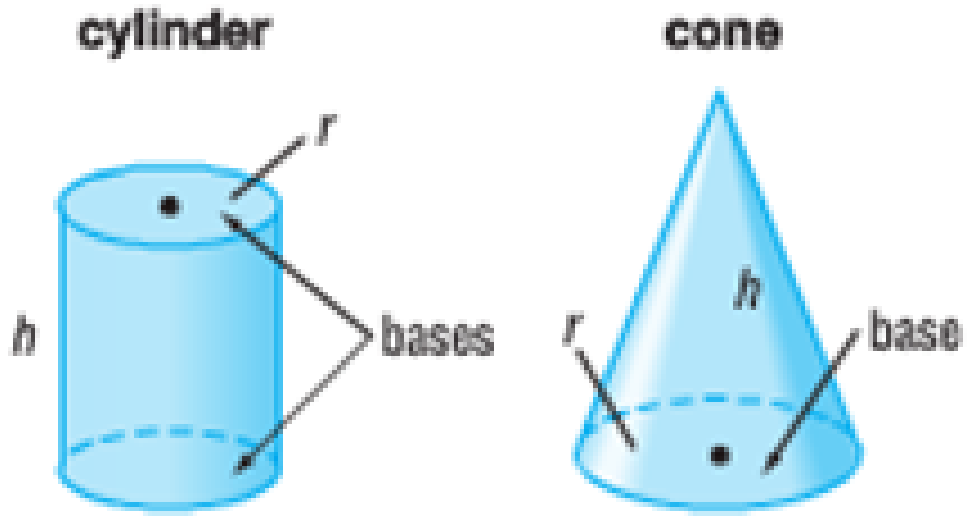
There are also solids that are not polyhedrons. A **cylinder** is a three-dimensional figure with two parallel congruent circular bases connected by a curved surface. A **cone** has one circular base connected by a curved side to a single vertex.



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Got It? Do this problem to find out.

a.

Figure name: triangular pyramid

base: $\triangle JML$

faces: $\triangle JML$, $\triangle JMK$, $\triangle JKL$, $\triangle KML$

edges: $\overline{JK}$, $\overline{JM}$, $\overline{MK}$, $\overline{ML}$, $\overline{JL}$, $\overline{LK}$

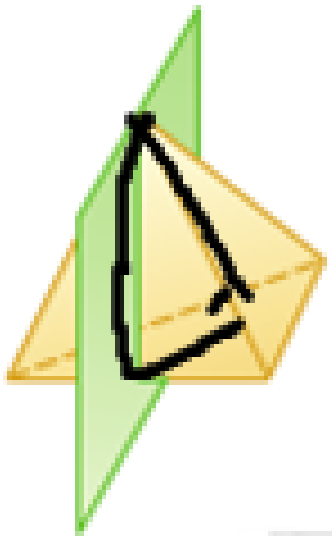
[redacted]: $\angle M$, $\angle J$, $\angle L$, $\angle K$

vertices: J, K, L, M

Identify Cross Sections

The intersection of a solid and a plane is called a **cross section** of the solid.

2. Describe the shape resulting from the cross section shown. (Example 4) triangle



http://www.shodor.org/interactivate/activities/CrossSectionFlyer/