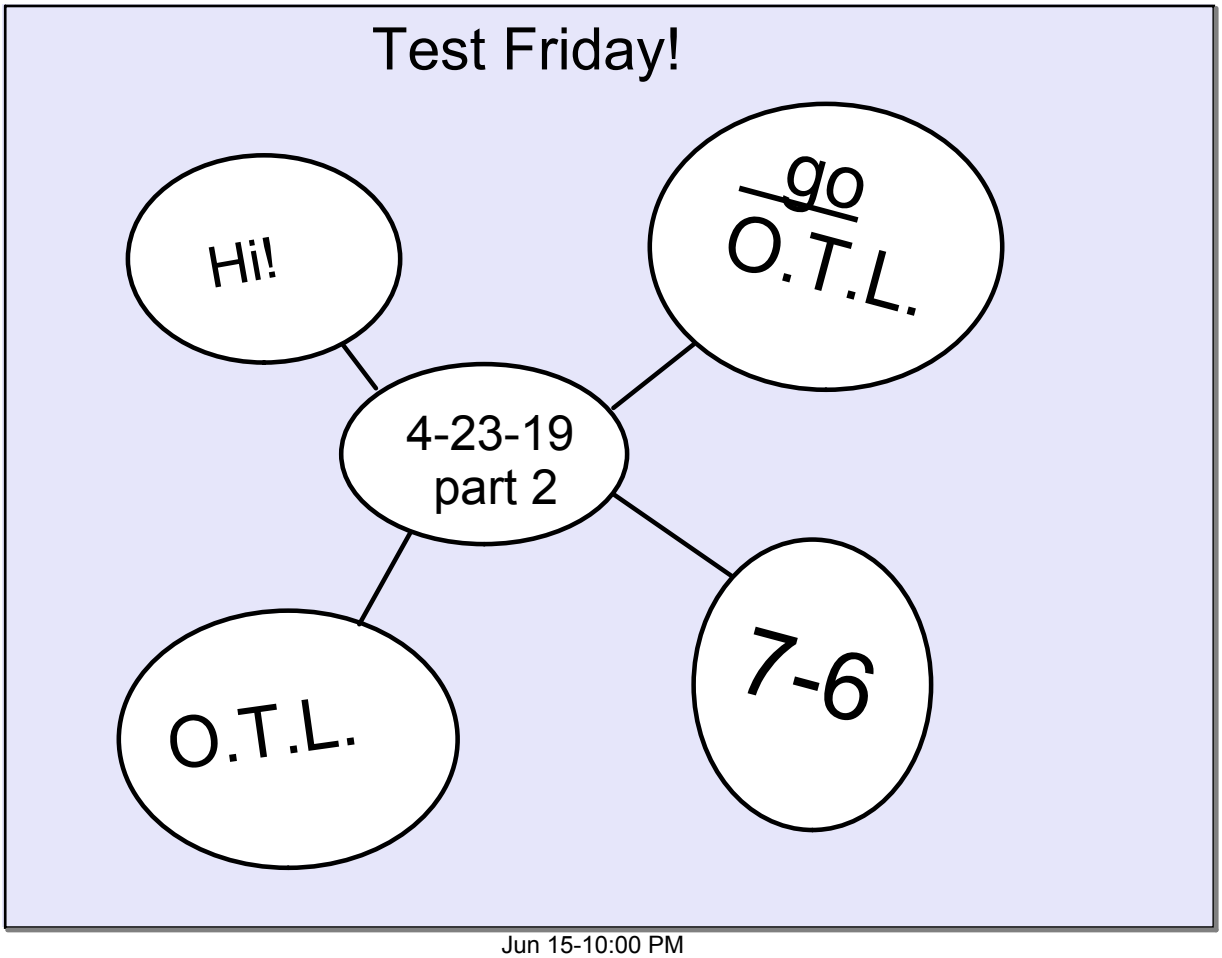

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7-6

Cross Sections

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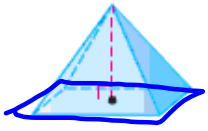
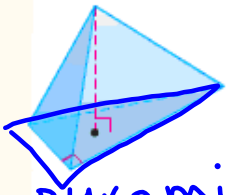
A **prism** is a three-dimensional figure with at least two parallel, congruent faces called **bases** that are polygons. A **pyramid** is a three-dimensional figure with one base that is a polygon. Its other faces are triangles.

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

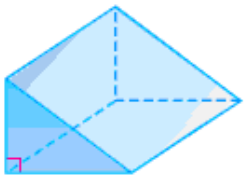
prism



pyramid

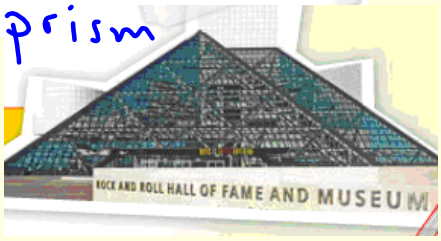


pyramid



prism

The Rock and Roll Hall of Fame is shown at the right. Is the shape of the building a *prism* or *pyramid*? Explain.



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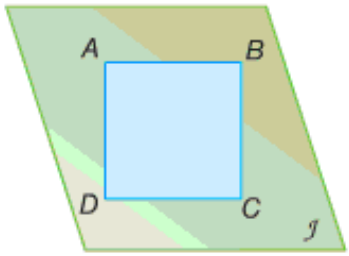
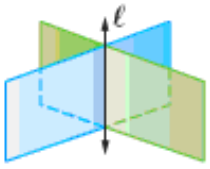
Identify Three-Dimensional Figures

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.

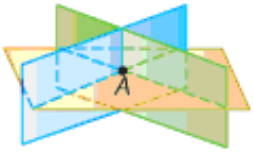


Just as two lines in a plane can intersect or be parallel, there are different ways that planes may be related in space.

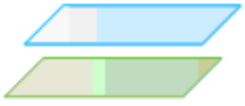
Intersect in a Line



Intersect at a Point



No Intersection



These are called *parallel planes*.

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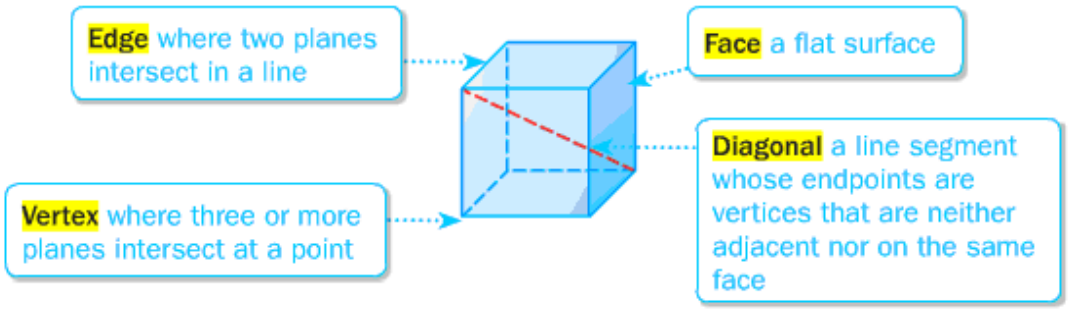
Intersecting planes can form three-dimensional figures. A **polyhedron** is a three-dimensional figure with flat surfaces that are polygons. Prisms and pyramids are both polyhedrons. Some terms associated with three-dimensional figures are *edge*, *face*, *vertex*, and *diagonal*.



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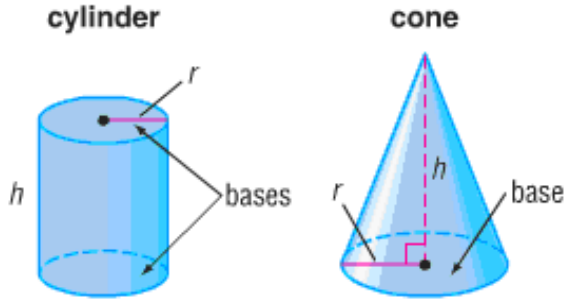
There are also solids that are not polyhedrons. A **cylinder** is a three-dimensional figure with two parallel congruent circular bases connected by a curved surface. A **cone** has one circular base connected by a curved side to a single vertex.



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a.

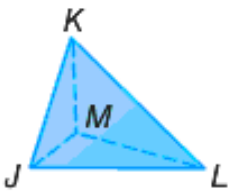

Figure name: triangular pyramid

base: △JML

faces: △JKL, △JMK, △KML

edges: $\overline{KJ}$, $\overline{KL}$, $\overline{ML}$, $\overline{KM}$, $\overline{JL}$, $\overline{MJ}$

vertices: K, M, J, L.

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Identify Cross Sections

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

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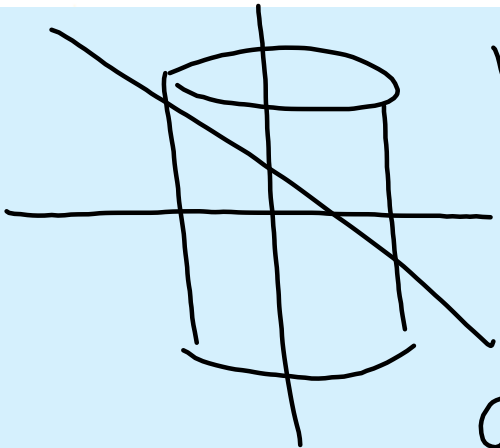
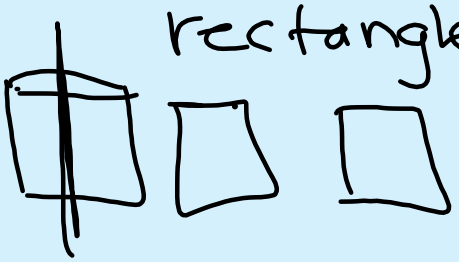
b. Describe the shape resulting from a vertical, angled, and horizontal cross section of a cylinder.

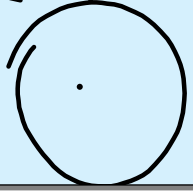


Vertical = rectangle



Angled = Oval (ellipse)

Horizontal



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1. Identify the figure. Then name the bases, faces, edges, and vertices. (Examples 1–3)

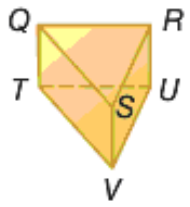

Figure name: Triangular Prism

bases: $\triangle QRS$, $\triangle TUV$

faces: QSVT, QRUT, RUVS

edges: $\overline{QR}$, $\overline{RS}$, $\overline{QS}$, $\overline{TU}$, $\overline{UV}$, $\overline{VT}$, $\overline{QT}$, $\overline{SV}$, $\overline{RU}$,

vertices:

Q, R, U, S, T, V

Jun 16-8:44 PM

O.T.L.

wkst 116 and 118

Jun 15-10:18 PM