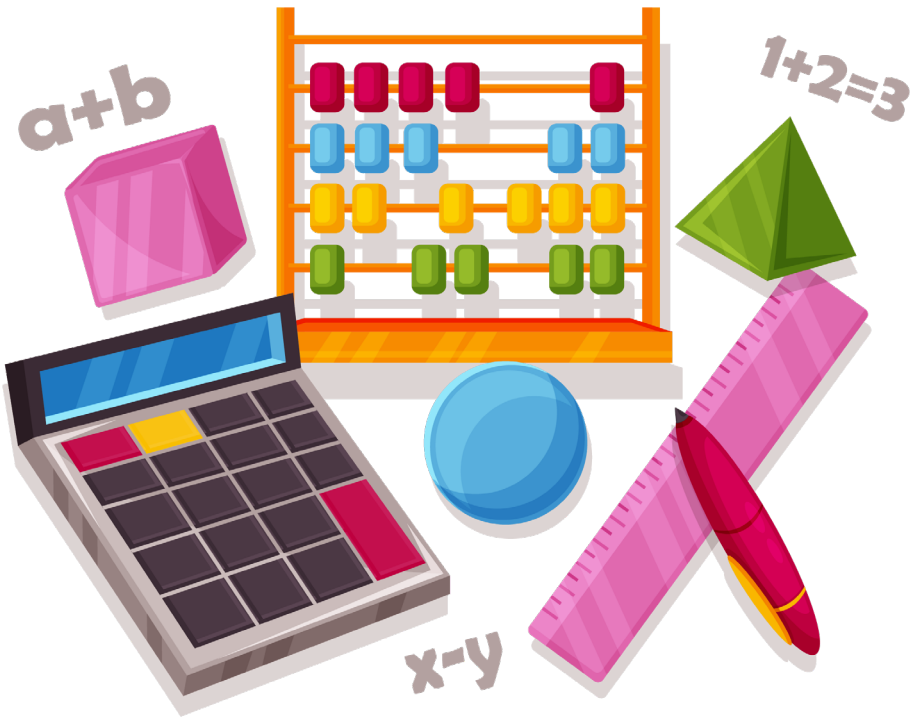
ICON

Identifying Three-Dimensional Figures



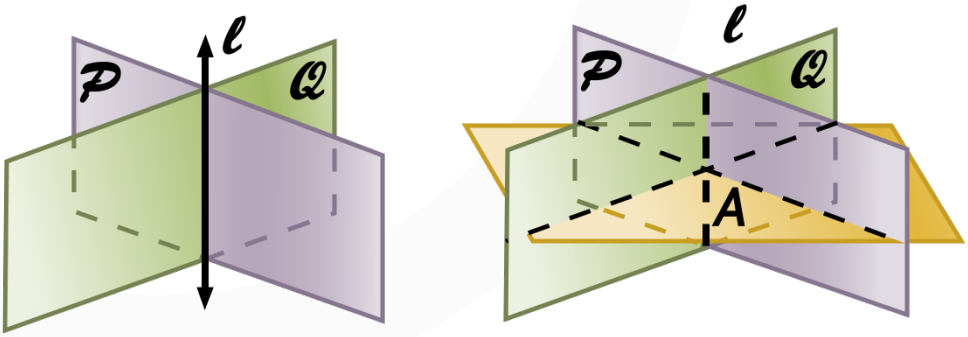
Three-Dimensional Figures

Vocabulary A-Z

Let us learn some vocabulary

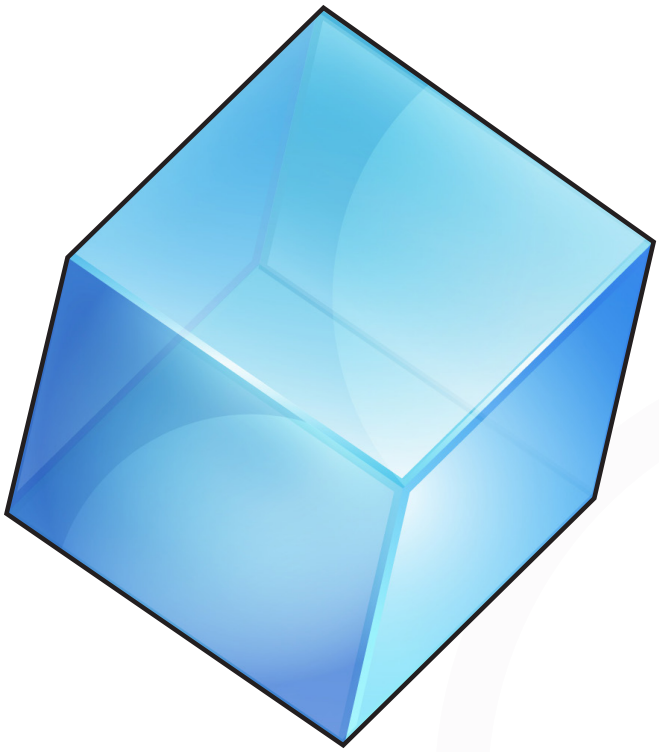
plane

A plane is a two dimensional flat surface that extends in all directions.



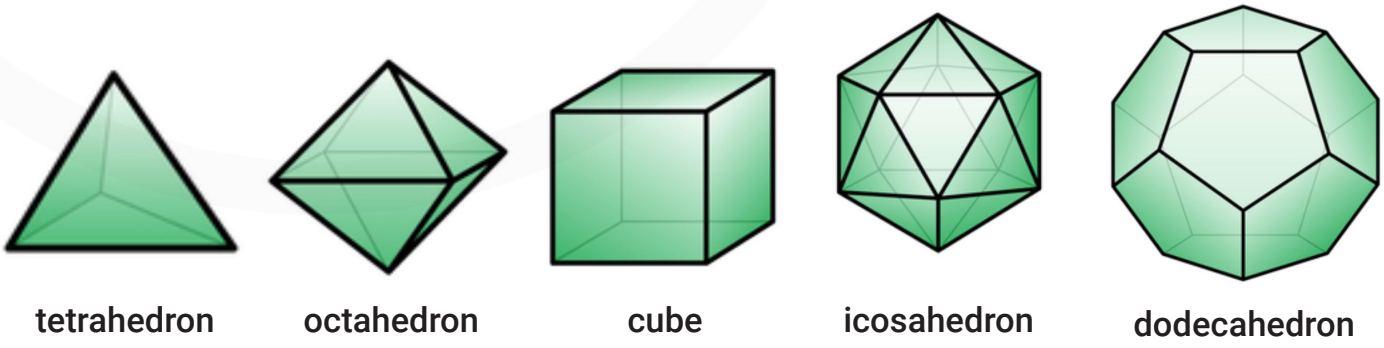
solids

Intersecting planes can also form three-dimensional figures or solids.

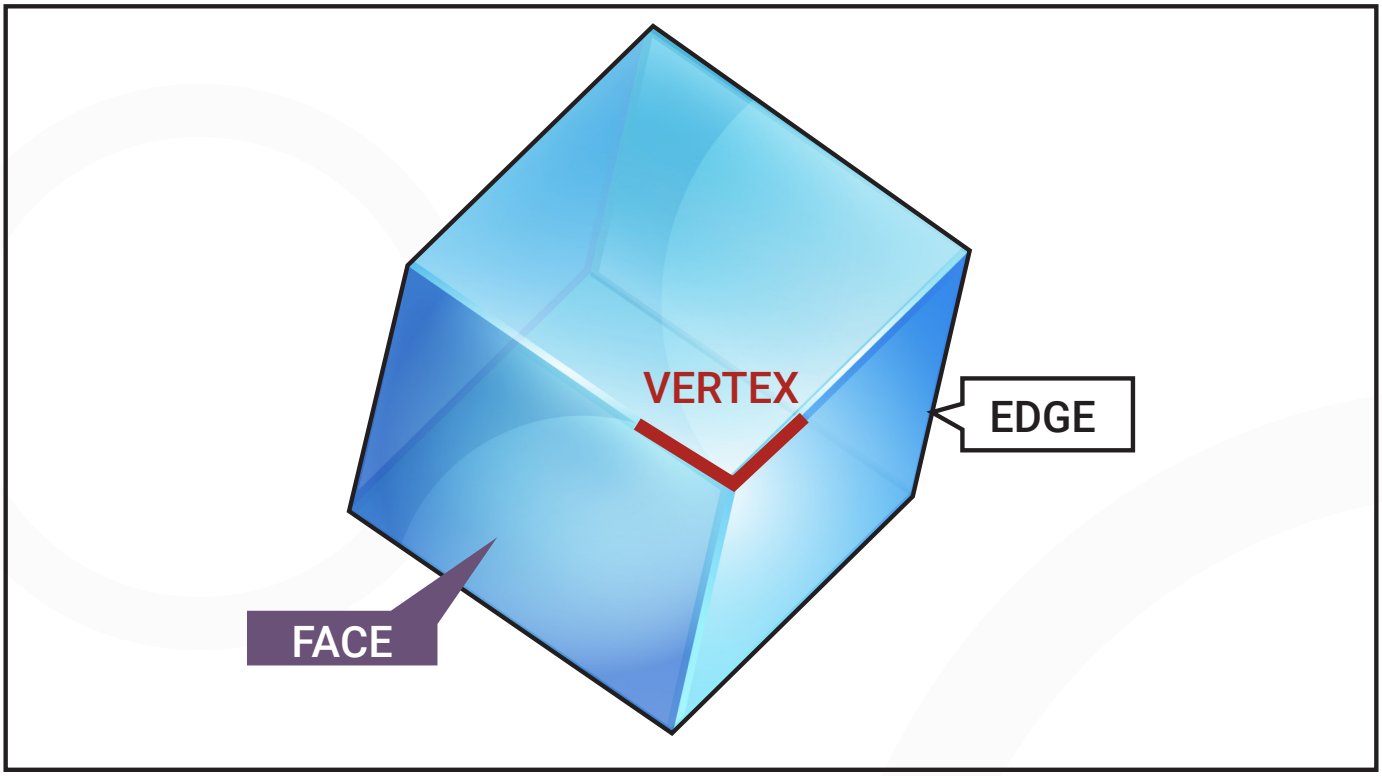


polyhedron

A polyhedron is a solid with flat surfaces that are polygons.



tetrahedron | octahedron | cube | icosahedron | dodecahedron



edge

An edge is where two planes intersect in a line.

vertex

A vertex is where three or more planes intersect in a point.

face

A face is a flat surface.

prism

A prism is a polyhedron with two parallel, congruent faces called bases that are polygons.

pentagonal prism

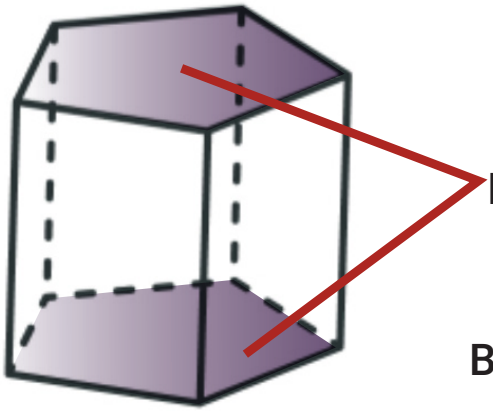
rectangular prism

Hexagonal prism

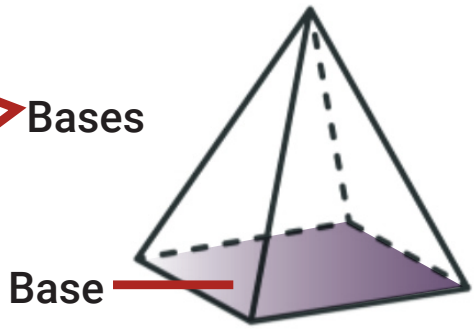
Triangular prism

base

The two parallel, congruent faces on a polyhedron are called bases.



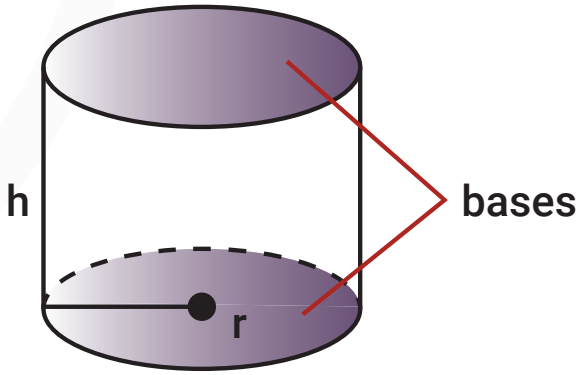
Prism



Pyramid

cylinder

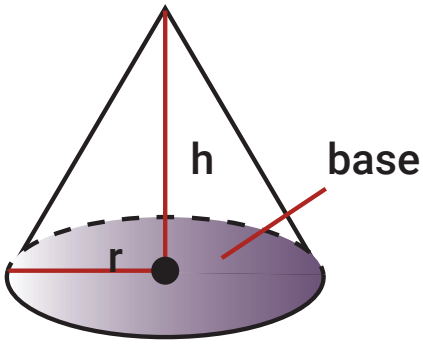
A cylinder is a solid with congruent, parallel bases that are circles connected with a curved side.



cylinder

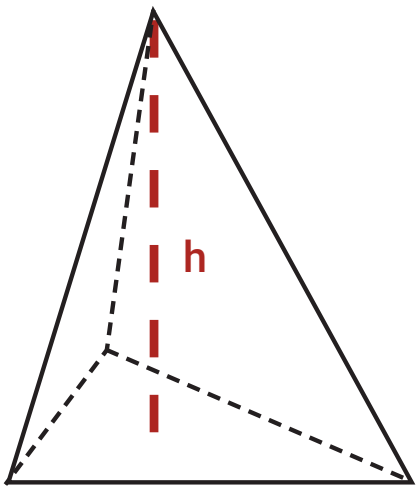
cone

A cone is a solid with one circular base and a vertex, connected by a curved side.

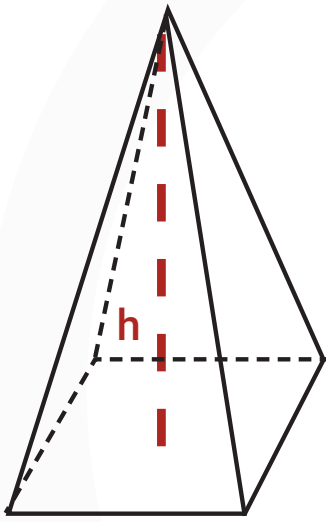


pyramid

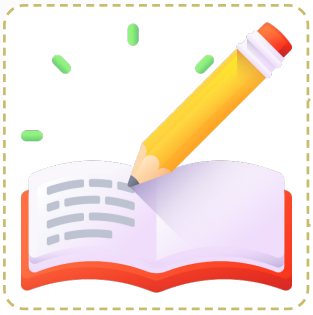
A pyramid is a polyhedron with one base that is any polygon. Its other faces are triangles.



Triangular Pyramid

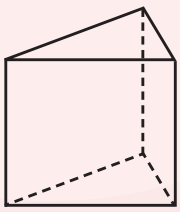
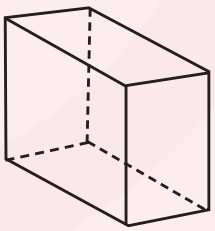
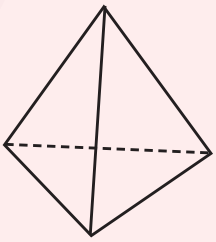
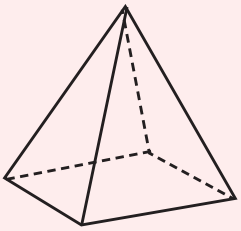


Rectangular Pyramid



Concept Summary

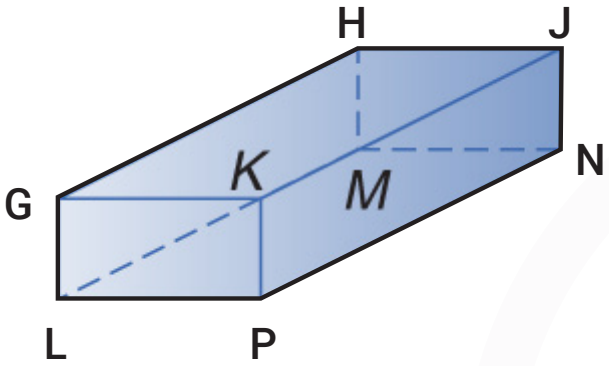
Polyhedrons

Polyhedron	triangular prism	rectangular prism	triangular pyramid	rectangular pyramid
Number of Bases	2	2	1	1
Polygon Base	triangle	rectangle	triangle	rectangle
Figure				

Let's Begin

Identify Solids

A. Identify the solid. Name the bases, faces, edges, and vertices.



ANSWER

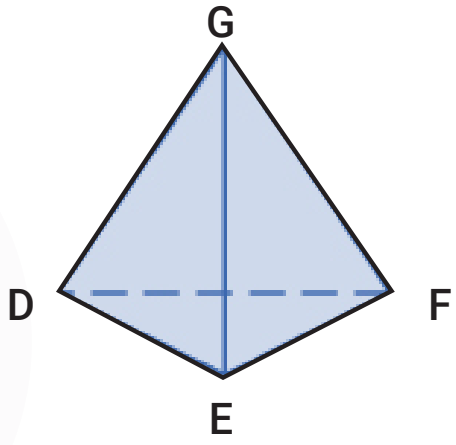
This figure has two parallel congruent bases that are rectangles, GHJK and LMNP, so it is a rectangular prism.

faces: GHJK, LMNP, GHML, HJNM, JKPN, GKPL

edges: $\overline{GH}$, $\overline{HJ}$, $\overline{JK}$, $\overline{GK}$, $\overline{LM}$, $\overline{MN}$, $\overline{NP}$, $\overline{LP}$, $\overline{GL}$, $\overline{HM}$, $\overline{JN}$, $\overline{KP}$

vertices: G, H, J, K, L, M, N, P

B. Identify the solid. Name the bases, faces, edges, and vertices.



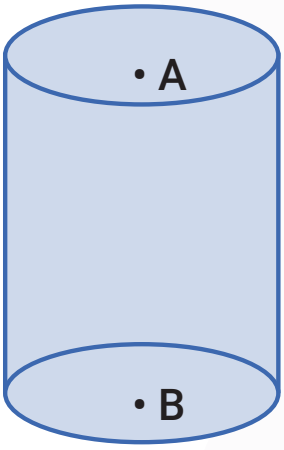
ANSWER **This figure has one triangular base, DEF, so it is a triangular pyramid.**

faces: DEF, DEG, DFG, EFG

edges: $\overline{DE}$, $\overline{DF}$, $\overline{DG}$, $\overline{EF}$, $\overline{EG}$, $\overline{FG}$

vertices: D, E, F, G

C. Identify the solid. Name the bases, faces, edges, and vertices.



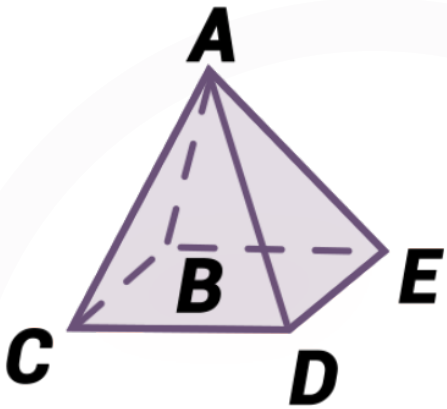
ANSWER The solid has two parallel circular bases. So, it is a cylinder: bases A and B.

Your Turn!

Identify Solids

A. Identify the solid. Name the bases, faces, edges, and vertices.

A. rectangular pyramid;
base: BCDE
faces: $\overline{ABC}$, $\overline{ACD}$, $\overline{ADE}$, $\overline{AEB}$, $\overline{BCDE}$
edges: $\overline{AB}$, $\overline{AC}$, $\overline{AD}$, $\overline{AE}$, $\overline{BC}$, $\overline{CD}$, $\overline{DE}$, $\overline{EB}$
vertices: A, B, C, D, E

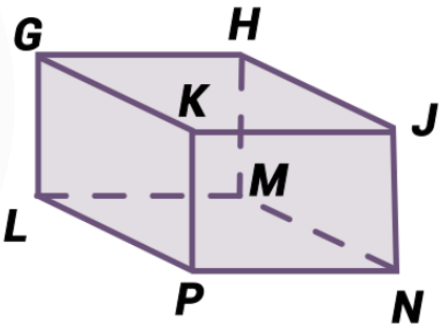


B. rectangular pyramid;
base: BCDE
faces: $\overline{ABC}$, $\overline{ACD}$, $\overline{ADE}$, $\overline{AEB}$, $\overline{BCDE}$
edges: $\overline{AB}$, $\overline{AC}$, $\overline{AD}$, $\overline{AE}$, $\overline{BC}$, $\overline{CD}$, $\overline{DE}$, $\overline{EB}$
vertices: A, B, C, D, E

C. triangular pyramid;
base: BCDE
faces: ABC, ACD, ADE, AEB
edges: $\overline{AB}$, $\overline{AC}$, $\overline{AD}$, AE
vertices: A, B, C, D, E

D. rectangular pyramid;
base: BCDE
faces: ABC, ACD, ADE, AEB
edges: $\overline{AB}$, $\overline{AC}$, $\overline{AD}$, $\overline{AE}$
vertices: A, B, C, D, E

B. Identify the solid. Name the bases, faces, edges, and vertices.



A. rectangular pyramid;

bases: GHJK, LMNP

faces: GHJK, LMNP, GHML, HJNM, JKPN, GKPL

edges: $\overline{GH}$, $\overline{HJ}$, $\overline{JK}$, $\overline{GK}$, $\overline{LM}$, $\overline{MN}$, $\overline{NP}$, $\overline{LP}$, $\overline{GL}$, $\overline{HM}$, $\overline{JN}$, $\overline{KP}$

vertices:G, H, J, K, L, M, N, P

B. rectangular prism;

bases: GHJK, LMNP

faces: GHML, HJNM, JKPN, GKPL

edges: $\overline{GH}$, $\overline{HJ}$, $\overline{JK}$, $\overline{GK}$, $\overline{MN}$, $\overline{NP}$, $\overline{LP}$, $\overline{LM}$

vertices:G, H, J, K, L, M, N, P

C. triangular prism;

bases: GHJK, LMNP

faces: GHML, HJNM, JKPN, GKPL

edges: $\overline{GH}$, $\overline{HJ}$, $\overline{JK}$, $\overline{GK}$, $\overline{MN}$, $\overline{NP}$, $\overline{LP}$, $\overline{LM}$

vertices:G, H, J, K, L, M, N, P

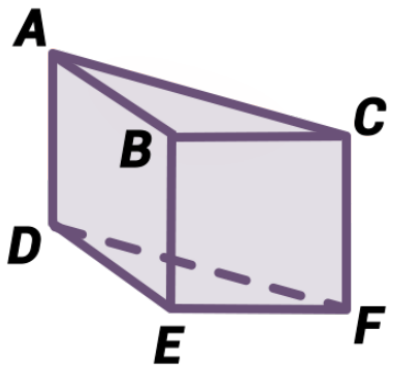
D. rectangular prism;

bases: GHJK, LMNP

faces: GHJK, LMNP, GHML, HJNM, JKPN, GKPL

edges: $\overline{GH}$, $\overline{HJ}$, $\overline{JK}$, $\overline{GK}$, $\overline{LM}$, $\overline{MN}$, $\overline{NP}$, $\overline{LP}$, $\overline{GL}$, $\overline{HM}$, $\overline{JN}$, $\overline{KP}$

vertices:G, H, J, K, L, M, N, P



A. triangular pyramid;

bases: ABCD, DEF

faces: ABC, ABED, ACFD, BCFE, DEF

edges: $\overline{AB}$, $\overline{AC}$, $\overline{AD}$, $\overline{BC}$, $\overline{BE}$, $\overline{CF}$, $\overline{DE}$, $\overline{DF}$, $\overline{EF}$

vertices: A, B, C, D, E, F

B. triangular prism;

bases: ABC, DEF

faces: ABC, ABED, ACFD, BCFE, DEF

edges: $\overline{AB}$, $\overline{AC}$, $\overline{AD}$, $\overline{BC}$, $\overline{BE}$, $\overline{CF}$, $\overline{DE}$, $\overline{DF}$, $\overline{EF}$

vertices: A, B, C, D, E, F

C. rectangular prism;

bases: ABC, DEF

faces: ABC, ABED, ACFD, BCFE, DEF

edges: $\overline{AB}$, $\overline{AC}$, $\overline{BC}$, $\overline{DE}$, $\overline{EF}$

vertices: A, B, C, D, E, F

D. triangular prism;

bases: ABC, DEF

faces: ABED, ACFD, BCFE

edges: $\overline{AB}$, $\overline{AC}$, $\overline{BC}$, $\overline{DE}$, $\overline{EF}$,

vertices: A, B, C, D, E, F