

Name _____ Date _____

LESSON 12.1

Practice B

For use with pages 792–801

Determine whether the solid is a polyhedron. If it is, name the polyhedron. *Explain your reasoning.*

1.



2.



Use Euler's Theorem to find the value of n .

4. Faces: 10
Vertices: n
Edges: 24

5. Faces: 14
Vertices: 24
Edges: n

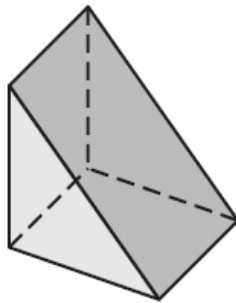
Sketch the polyhedron.

6. Pentagonal pyramid

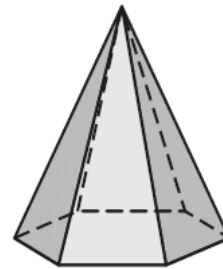
7. Hexagonal Prism

Find the number of faces, vertices, and edges of the polyhedron. Check your answer using Euler's Theorem.

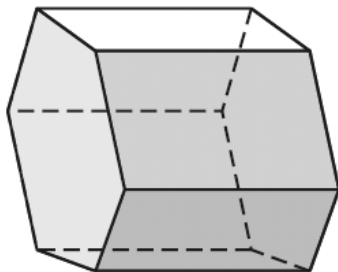
8.



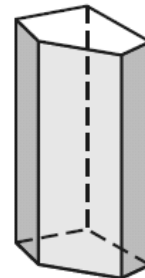
9.



9.



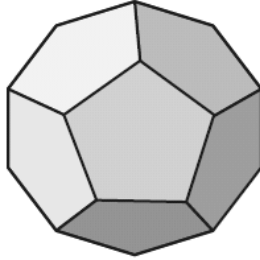
10.



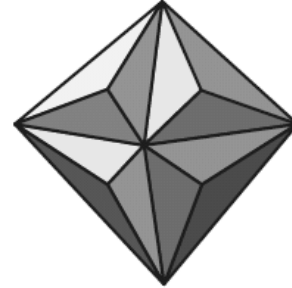
11. Visual Thinking An architect is designing a contemporary office building in the shape of a pyramid. The building will have eight sides. What is the shape of the base of the building?

Determine whether the solid is *convex* or *concave*.

12.

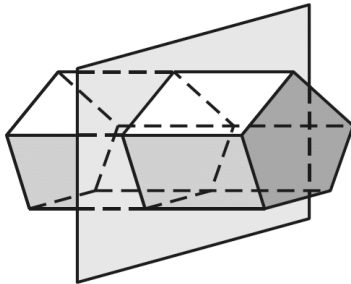


13.

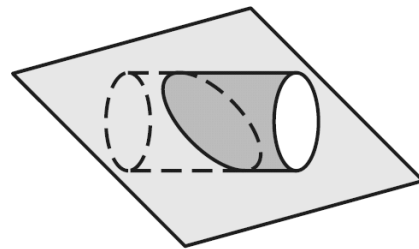


Describe the cross section formed by the intersection of the plane and the solid.

14.



15.



16. Multiple Choice Assume at least one face of a solid is congruent to at least one face of another solid. Which two solids can be adjoined by congruent faces to form a hexahedron?

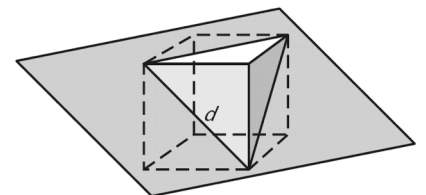
- A. A rectangular prism and a rectangular pyramid
- B. A triangular pyramid and a triangular pyramid
- C. A triangular prism and a triangular pyramid
- D. A cube and a triangular prism

Use the following information.

The figure at the right shows a cube that is intersected by a diagonal plane. The cross section passes through three vertices of the cube.

17. What type of triangle is the shape of the cross section?

18. If the edge length of the cube is 1, what is the length of the line segment d ?



19. If the edge length of the cube is $4\sqrt{2}$, what is the perimeter of the cross section?