4. 9

5. 12

6. 10

7. 64

8. octagon

9. double cone

## PRACTICE

**For Exercises 16–20, find the missing number for each polyhedron.** SEE EXAMPLES 1 AND 2

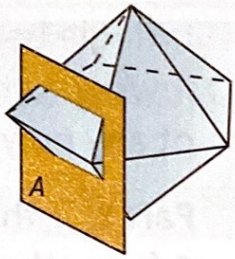
**16.** A polyhedron has 24 edges and 12 vertices. How many faces does it have? 14

**17.** A polyhedron has 20 faces and 12 vertices. How many edges does it have? 20

**18.** A polyhedron has 8 faces and 15 edges. How many vertices does it have? 9

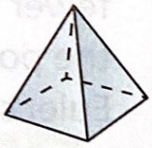
**19.** A polyhedron has 16 edges and 10 vertices. How many faces does it have? 8

**20.** Draw the cross section formed by the intersection of plane *A* and the polyhedron shown. What type of polygon is the cross section? SEE EXAMPLE 3




**For Exercises 20 and 21, use the square pyramid shown.** SEE EXAMPLE 4

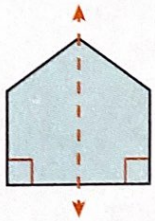
**21.** Visualize a plane intersecting the square pyramid parallel to the base. Describe the cross section. a square



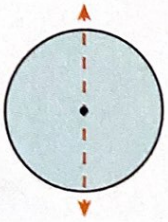
**22.** Visualize a plane intersecting the square pyramid through the vertex and perpendicular to opposite edges of the base. Describe the cross section. an isosceles triangle

**23.** Describe the three-dimensional figure that is formed from by rotating the rectangle about the side. SEE EXAMPLE 5 a cylinder

**24.** Describe the three-dimensional figure that is formed by rotating the pentagon about the line shown. SEE EXAMPLE 5
a cylinder with a cone on top



**25.** Describe the three-dimensional figure that is formed by rotating the circle about a diameter.
a sphere



# 20. hexagon