10.3 EXERCISES

HOMEWORK KEY

★ = **STANDARDIZED TEST PRACTICE** Exs. 17, 25, 26, 27, and 35

◯ = **HINTS AND HOMEWORK HELP** for Exs. 5, 7, 9, 11, 25 at classzone.com

SKILL PRACTICE

VOCABULARY **Match the description with the solid.**

1. two rectangular bases **2.** three rectangular faces **3.** four triangular faces

A. triangular prism **B.** rectangular pyramid **C.** rectangular prism

CLASSIFYING SOLIDS **Classify the solid. Then tell whether it is a polyhedron.**

SEE EXAMPLE 1 on p. 534 for Exs. 4–6

4. 

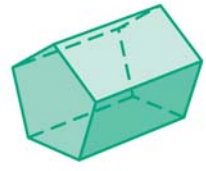
5. 

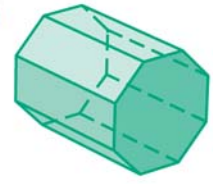
6. 

COUNTING FACES, EDGES, AND VERTICES **Classify the solid. Then count the number of faces, edges, and vertices.**

SEE EXAMPLES 2 AND 3 on p. 535 for Exs. 7–13

7. 

8. 

9. 

10. ERROR ANALYSIS A student says that because a hexagon has 6 sides, a hexagonal pyramid has 6 edges. What is wrong with this statement?

SKETCHING SOLIDS **Show two ways to represent the solid.**

11. rectangular prism **12.** hexagonal prism **13.** cylinder

CLASSIFYING SOLIDS **Classify the solids that form the structure.**

14. 

15. 

16. 

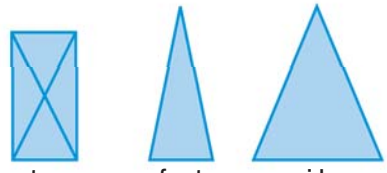
17. ★ MULTIPLE CHOICE What is the name of the solid with the given views?

(A) triangle

(B) triangular prism

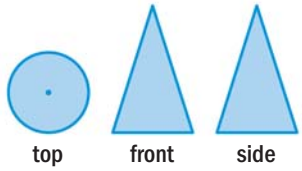
(C) triangular pyramid

(D) rectangular pyramid

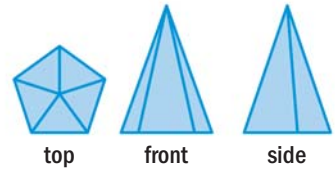


SKETCHING SOLIDS **Sketch the solid with the given views.**

18.

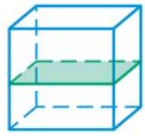


19.

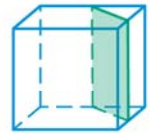


CHALLENGE **Classify the quadrilateral outlined in green, formed by the intersection of a cube and a plane.**

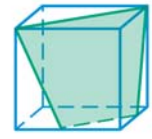
20.



21.



22.



23. **CHALLENGE** Sketch a cube and a plane whose intersection is (a) a triangle and (b) a hexagon.

PROBLEM SOLVING

24. **GUIDED PROBLEM SOLVING** Sketch a square pyramid.

a. Sketch a parallelogram for the square base.

b. Draw a dot centered above the parallelogram.

c. Connect the vertices of the parallelogram to the dot. Make any hidden lines dashed.

SEE EXAMPLE 1 on p. 534 for Exs. 25–27

25. ★ **MULTIPLE CHOICE** Which of the following solids is a polyhedron?

A

B

C

D

26. ★ **WRITING** *Explain* how a pyramid and a prism with congruent bases are alike and how they are different.

27. ★ **OPEN-ENDED MATH** Give an example of a cylinder, a cone, and a square prism that you find in your classroom or at home.

28. **LOOK FOR A PATTERN** Copy and complete the table. Use the pattern to write a formula that gives the number of edges of a polyhedron in terms of the number of faces and vertices. This is called *Euler's Formula*.

Figure	Number of faces F	Number of vertices V	Number of edges E	F + V
pentagonal pyramid	6	6	10	12
rectangular pyramid	?	?	?	?
triangular prism	?	?	?	?
rectangular prism	?	?	?	?