CHAPTER 1 REVIEW

It may seem that there's a lot to memorize in this chapter. But having defined terms yourself, you're more likely to remember and understand them. The key is to practice using these new terms and to be organized. Do the following exercises, then read Assessing What You've Learned for tips on staying organized.

Whether you've been keeping a good list or not, go back now through each lesson in the chapter and double-check that you've completed each definition and that you understand it. For example, if someone mentions a geometry term to you, can you sketch it? If you are shown a geometric figure, can you name it? Compare your list of geometry terms with the lists of your group members.

EXERCISES

▶ Answers to all exercises in every Chapter Review are provided in the back of the book.

For Exercises 1–16, identify the statement as true or false. For each false statement, explain why it is false or sketch a counterexample.

1. The three basic building blocks of geometry are point, line, and plane.

2. "The ray through point P from point Q" is written in symbolic form as $\overrightarrow{PQ}$.

3. "The length of segment PQ" can be written as PQ.

4. The vertex of angle PDQ is point P.

5. The symbol for *perpendicular* is $\perp$.

6. A scalene triangle is a triangle with no two sides the same length.

7. An acute angle is an angle whose measure is more than 90°.

8. If $\overrightarrow{AB}$ intersects $\overrightarrow{CD}$ at point P, then $\angle APD$ and $\angle APC$ are a pair of vertical angles.

9. A diagonal is a line segment in a polygon connecting any two nonconsecutive vertices.

10. If two lines lie in the same plane and are perpendicular to the same line, then they are parallel.

11. If the sum of the measures of two angles is 180°, then the two angles are complementary.

12. A trapezoid is a quadrilateral having exactly one pair of parallel sides.

13. A polygon with ten sides is a decagon.
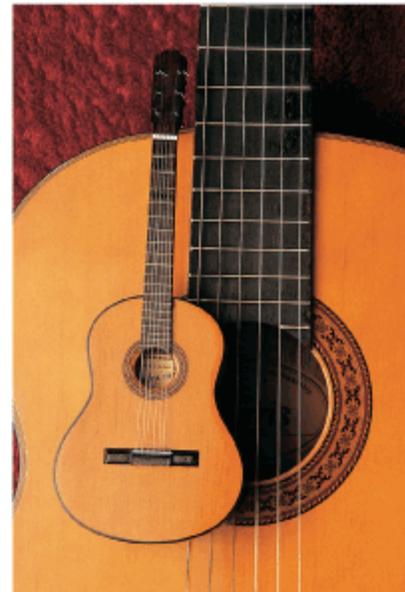
A knowledge of parallel lines, planes, arcs, circles, and symmetry is necessary to build durable guitars that sound pleasing.

14. A square is a rectangle with all the sides equal in length.

15. A pentagon has five sides and six diagonals.

16. The largest chord of a circle is a diameter of the circle.

For Exercises 17–25, match each term with its figure below, or write "no match."

17. Octagon

18. Isosceles right triangle

19. Rhombus

20. Trapezoid

21. Pyramid

**22.** Cylinder

23. Concave polygon

24. Chord

25. Minor arc
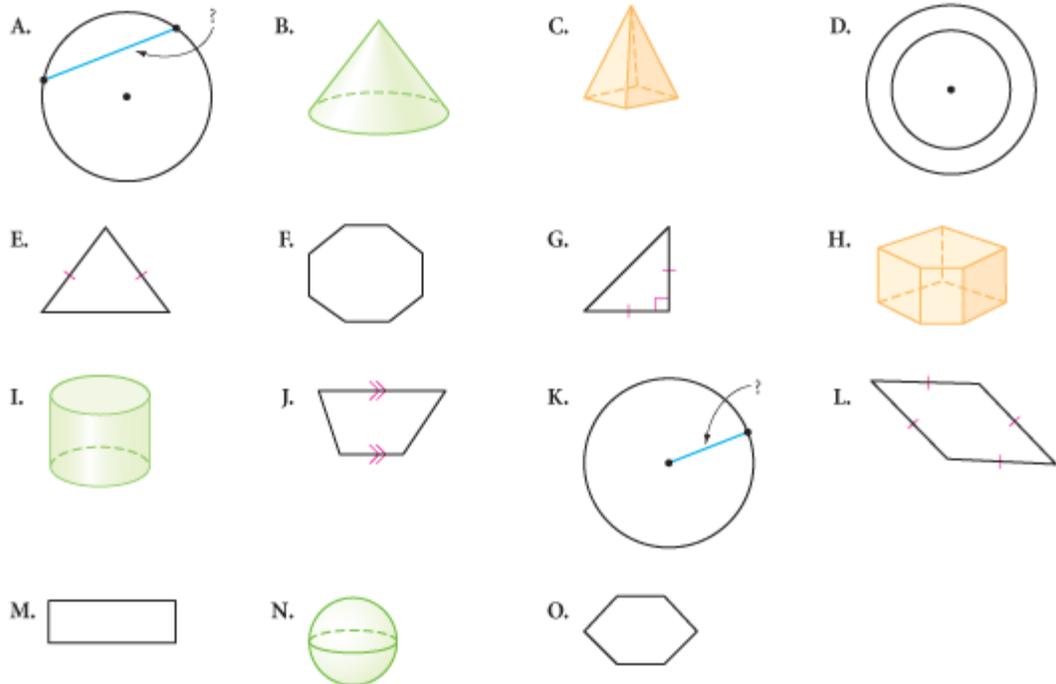
For Exercises 26–33, sketch, label, and mark each figure.

26. Kite *KYTE* with $\overline{KY} \cong \overline{YT}$

27. Scalene triangle *PTS* with $PS = 3$, $ST = 5$, $PT = 7$, and angle bisector $\overline{SO}$

28. Hexagon *REGINA* with diagonal $\overline{AG}$ parallel to sides $\overline{RE}$ and $\overline{NI}$

29. Trapezoid *TRAP* with $\overline{AR}$ and $\overline{PT}$ the nonparallel sides. Let *E* be the midpoint of $\overline{PT}$ and let *Y* be the midpoint of $\overline{AR}$ Draw $\overline{EY}$.

30. A triangle with exactly one line of reflectional symmetry

31. A circle with center at *P*, radii $\overline{PA}$ and $\overline{PT}$, and chord $\overline{TA}$ creating a minor arc $\overline{TA}$

32. A pair of concentric circles with the diameter $\overline{AB}$ of the inner circle perpendicular at B to a chord $\overline{CD}$ of the larger circle

33. A pyramid with a pentagonal base

34. Draw a rectangular prism 2 inches by 3 inches by 5 inches, resting on its largest face. Draw lines on the three visible faces, showing how the solid can be divided into 30 smaller cubes.

35. Use your protractor to draw a 125° angle.

36. Use your protractor, ruler, and compass to draw an isosceles triangle with a vertex angle having a measure of 40°.

37. Use your geometry tools to draw a regular octagon.

38. What is the measure of $\angle A$? Use your protractor.
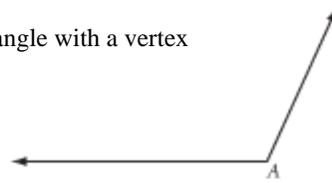
For Exercises 39–42, find the lengths x and y. (Every angle on each block is a right angle.)

39.

40.

41.

42.
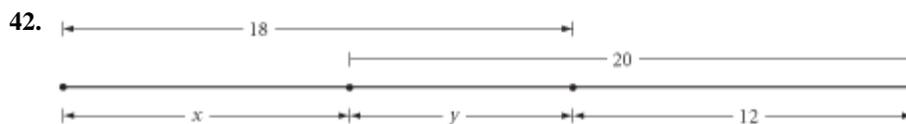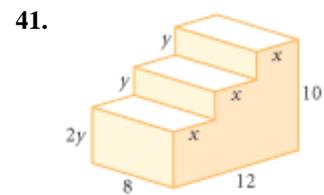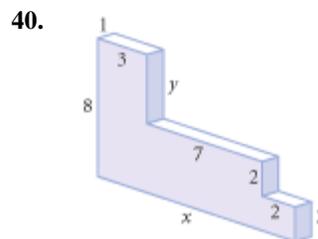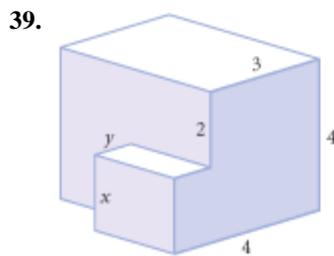
43. If D is the midpoint of $\overline{AC}$, is the midpoint of $\overline{AB}$, and $BD = 12$ cm, what is the length of $\overline{AB}$?

44. If $\overrightarrow{BD}$ is the angle bisector of $\angle ABC$ and $\overrightarrow{BE}$ is the angle bisector of $\angle DBC$, find $m\angle EBA$ if $m\angle DBE = 32°$.

45. What is the measure of the angle formed by the hands of the clock at 2:30?

46. If the pizza is cut into 12 congruent pieces, how many degrees are in each central angle?

47. Make a Venn diagram to show the relationships among these shapes: quadrilaterals, rhombus, rectangle, square, trapezoid.

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48. The box at right is wrapped with two strips of ribbon, as shown. What is the minimum length of ribbon needed to decorate the box?

49. At one point in a race, Rico was 15 ft behind Paul and 18 ft ahead of Joe. Joe was trailing George by 30 ft. Paul was ahead of George by how many ft?

50. A large aluminum ladder was resting vertically against the research shed at midnight, when it began to slide down the side of the shed. A burglar was clinging to the ladder's midpoint, holding a pencil flashlight that was visible in the dark. Witness Jill Seymour claimed to see the ladder slide. What did she see? That is, what was the path taken by the bulb of the flashlight? Draw a diagram showing the path. (Devise a physical test to check your visual thinking. You might try sliding a meterstick against a wall, or you might plot points on graph paper.)

51. Jiminey Cricket is caught in a windstorm. At 5:00 P.M. he is 500 cm away from his home. Each time he jumps toward home, he leaps a distance of 50 cm, but before he regains strength to jump again, he is blown back 40 cm. If it takes a full minute between jumps, what time will Jiminey get home?
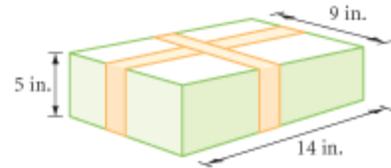
52. If the right triangle *BAR* were rotated 90° clockwise about point *B,* to what location would point *A* be relocated?
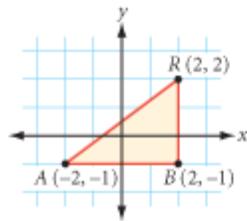
53. Sketch the three-dimensional figure formed by folding the net below into a solid.

54. Sketch the solid of revolution formed when you spin the two-dimensional figure about the line.

55. Sketch the section formed when the solid is sliced by the plane, as shown.