

GUIDED PRACTICE

Vocabulary Check ✓

Concept Check ✓

Skill Check ✓

1. What kind of geometric figure is an *angle bisector*?
2. How do you indicate congruent segments in a diagram? How do you indicate congruent angles in a diagram?
3. What is the simplified form of the Midpoint Formula if one of the endpoints of a segment is $(0, 0)$ and the other is (x, y) ?

Find the coordinates of the midpoint of a segment with the given endpoints.

4. $A(5, 4), B(-3, 2)$ 5. $A(-1, -9), B(11, -5)$ 6. $A(6, -4), B(1, 8)$

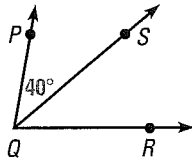
Find the coordinates of the other endpoint of a segment with the given endpoint and midpoint M .

7. $C(3, 0)$ 8. $D(5, 2)$ 9. $E(-4, 2)$
 $M(3, 4)$ $M(7, 6)$ $M(-3, -2)$

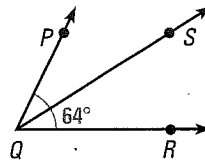
10. Suppose $m\angle JKL$ is 90° . If the ray \overrightarrow{KM} bisects $\angle JKL$, what are the measures of $\angle JKM$ and $\angle LKM$?

\overrightarrow{QS} is the angle bisector of $\angle PQR$. Find the two angle measures not given in the diagram.

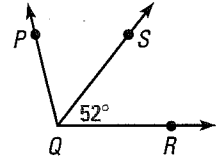
11.



12.



13.



PRACTICE AND APPLICATIONS

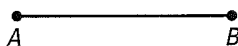
STUDENT HELP

Extra Practice to help you master skills is on p. 804.

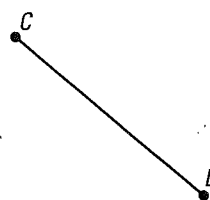


CONSTRUCTION Use a ruler to measure and redraw the line segment on a piece of paper. Then use construction tools to construct a segment bisector.

14.



15.



16.



STUDENT HELP

HOMework HELP

- Example 1: Exs. 17–24
 Example 2: Exs. 25–30
 Example 3: Exs. 37–42
 Example 4: Exs. 37–42
 Example 5: Exs. 44–49

FINDING THE MIDPOINT Find the coordinates of the midpoint of a segment with the given endpoints.

17. $A(0, 0)$ 18. $J(-1, 7)$ 19. $C(10, 8)$ 20. $P(-12, -9)$
 $B(-8, 6)$ $K(3, -3)$ $D(-2, 5)$ $Q(2, 10)$
 21. $S(0, -8)$ 22. $E(4, 4)$ 23. $V(-1.5, 8)$ 24. $G(-5.5, -6.1)$
 $T(-6, 14)$ $F(4, -18)$ $W(0.25, -1)$ $H(-0.5, 9.1)$

47 USING ALGEBRA Find the coordinates of the other endpoint of a segment with the given endpoint and midpoint M .

25. $R(2, 6)$
 $M(-1, 1)$

26. $T(-8, -1)$
 $M(0, 3)$

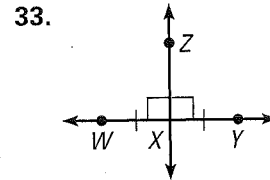
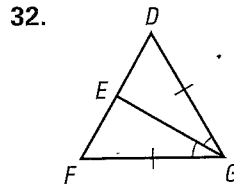
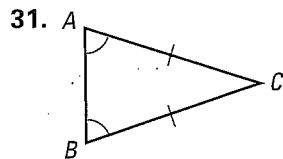
27. $W(3, -12)$
 $M(2, -1)$

28. $Q(-5, 9)$
 $M(-8, -2)$

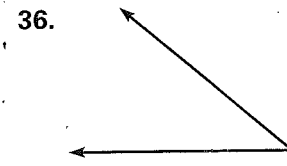
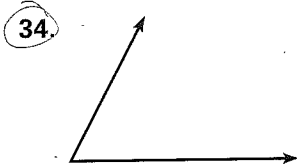
29. $A(6, 7)$
 $M(10, -7)$

30. $D(-3.5, -6)$
 $M(1.5, 4.5)$

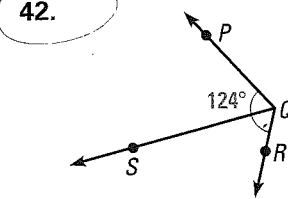
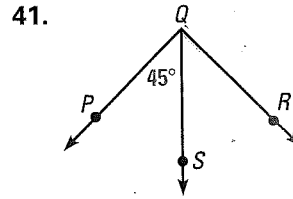
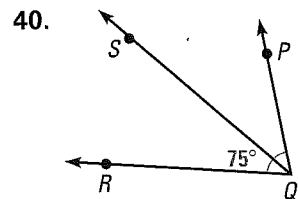
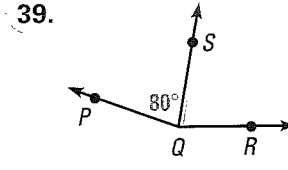
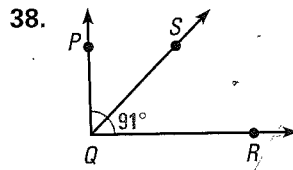
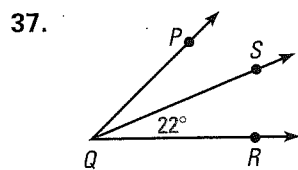
RECOGNIZING CONGRUENCE Use the marks on the diagram to name the congruent segments and congruent angles.



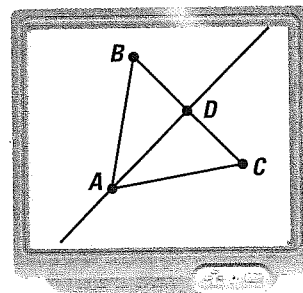
CONSTRUCTION Use a protractor to measure and redraw the angle on a piece of paper. Then use construction tools to find the angle-bisector.



ANALYZING ANGLE BISECTORS \overrightarrow{QS} is the angle bisector of $\angle PQR$. Find the two angle measures not given in the diagram.



43. **TECHNOLOGY** Use geometry software to draw a triangle. Construct the angle bisector of one angle. Then find the midpoint of the opposite side of the triangle. Change your triangle and observe what happens.



Does the angle bisector *always* pass through the midpoint of the opposite side? Does it *ever* pass through the midpoint?

STUDENT HELP
INTERNET SOFTWARE HELP
Visit our Web site
www.mcdougallittell.com
to see instructions for
several software
applications.