Chapter 8

8.1 Find the value of *x*.

1.

128° 61°
59° *x*°

2.

91°
140°
82° *x*°
137°

3.

149° 153°
122°
115°
154° *x*°

4.

x°
146°
136°

5.

46° 94° 35°
x°
148°
85°

6.

x°
100° 101°
x° 107°

8.1 Find the measure of an interior angle and an exterior angle of the indicated regular polygon.

7. Regular hexagon

8. Regular 9-gon

9. Regular 17-gon

8.2 Find the value of each variable in the parallelogram.

10.

12
a
7
b

11.

6
2*a* + 4
14
b + 1

12.

18
$\frac{2}{3}a$
b
a

13.

b°
$\frac{(n-2) \cdot 180}{n}$
a° 63°

14.

3*a*°
a° *b*°

15.

2*b* + 4
7
a *b* + 7
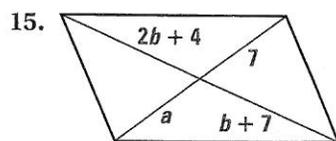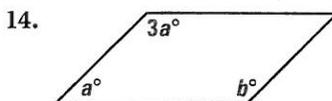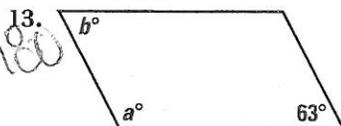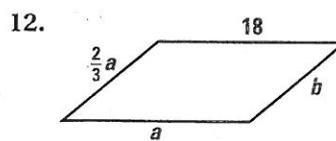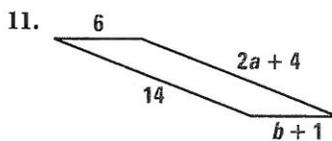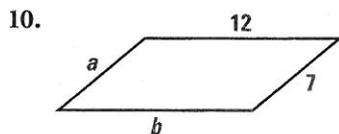
8.2 Use the diagram to copy and complete the statement.

16. ∠WXV ≅ _?_

17. ∠ZWV ≅ _?_

18. ∠WVX ≅ _?_

19. WV = _?_

20. WZ = _?_

21. 2 · ZV = _?_

W X
V
Z Y
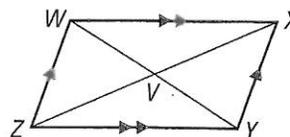
8.3 The vertices of quadrilateral *ABCD* are given. Draw *ABCD* in a coordinate plane and show that it is a parallelogram.

22. *A*(5, 6), *B*(7, 3), *C*(5, −2), *D*(3, 1)

23. *A*(−8, 2), *B*(−6, 3), *C*(−1, 2), *D*(−3, 1)

24. *A*(−1, 11), *B*(2, 14), *C*(6, 11), *D*(3, 8)

25. *A*(−1, −5), *B*(4, −4), *C*(6, −9), *D*(1, −10)

8.3 *Describe* how to prove that quadrilateral *PQRS* is a parallelogram.

26.

P Q
S R

27.

P Q
S R

28.

P Q
T
S R
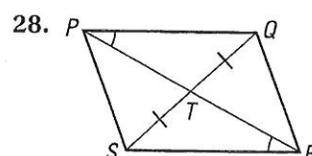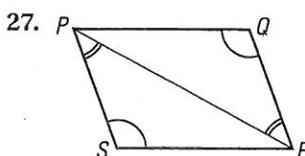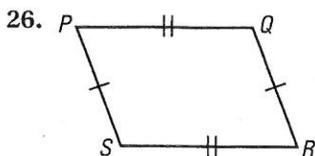
.4 Classify the special quadrilateral. *Explain* **your reasoning.**

29.

30.

31.
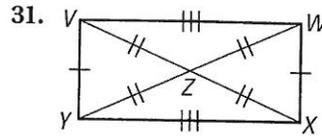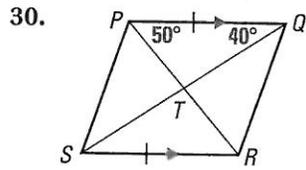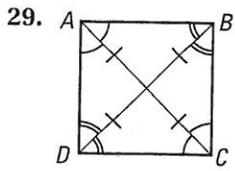
**.4 The diagonals of rhombus** $LMNP$ **intersect at** Q. **Given that** $LM = 5$ **and** $m\angle QLM = 30°$, **find the indicated measure.**

32. $m\angle LMQ$

33. $m\angle LQM$

34. MN
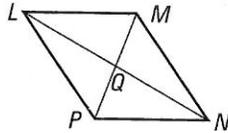
.5 Find the value of x.

35.

36.

37.
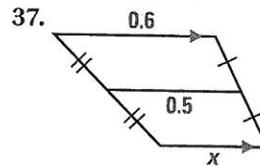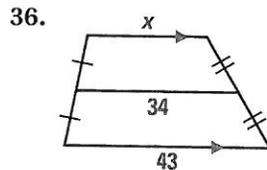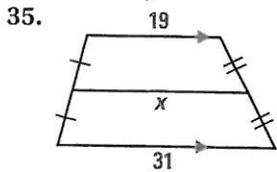
5 $RSTV$ **is a kite. Find** $m\angle V$.

38.

39.

40.
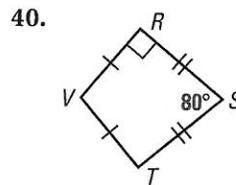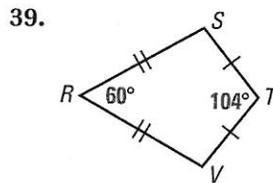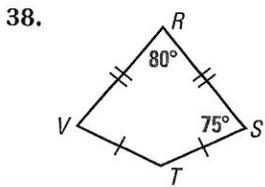
6 Give the most specific name for the quadrilateral. *Explain* **your reasoning.**

41.

42.

43.

44.

45.

46.
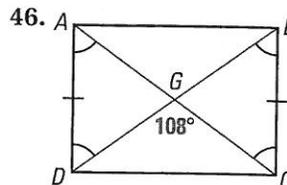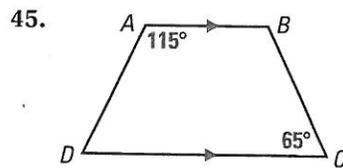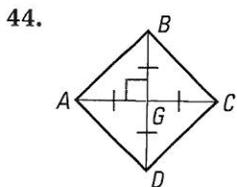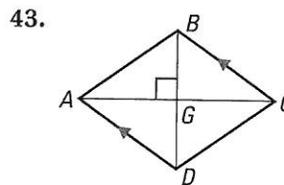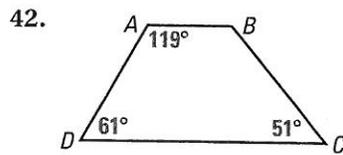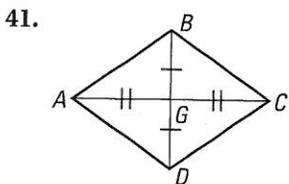
5 The vertices of quadrilateral $DEFG$ **are given. Give the most specific name for** $DEFG$. *Justify* **your answer.**

47. $D(6, 8)$, $E(9, 12)$, $F(12, 8)$, $G(9, 6)$

48. $D(1, 2)$, $E(4, 1)$, $F(3, -2)$, $G(0, -1)$

49. $D(10, 3)$, $E(14, 4)$, $F(20, 2)$, $G(12, 0)$

50. $D(-2, 10)$, $E(1, 13)$, $F(5, 13)$, $G(-2, 6)$