Name _____ Key _____ Date _____

Vocabulary and Concept Check

diagonal (p. 404)	median (p. 440)	rhombus (p. 431)
isosceles trapezoid (p. 439)	parallelogram (p. 411)	square (p. 432)
kite (p. 438)	rectangle (p. 424)	trapezoid (p. 439)

A complete list of postulates and theorems can be found on pages R1–R8.

Exercises State whether each sentence is *true* or *false*. If false, replace the underlined term to make a true sentence.

1. The diagonals of a <u>rhombus</u> are perpendicular. **T**
2. All <u>squares</u> are rectangles. **T**
3. If a parallelogram is a <u>rhombus</u>, then the diagonals are congruent. **F – rectangle/square**
4. Every <u>parallelogram</u> is a quadrilateral. **T**
5. A(n) <u>rhombus</u> is a quadrilateral with exactly one pair of parallel sides. **F trapezoid**
6. Each diagonal of a <u>rectangle</u> bisects a pair of opposite angles. **F Rhombus/Square**
7. If a quadrilateral is both a rhombus and a rectangle, then it is a <u>square</u>. **T**
8. Both pairs of base angles in a(n) <u>isosceles trapezoid</u> are congruent. **T**

Exercises Find the measure of each interior angle of a regular polygon given the number of sides. *See Example 1 on page 405.*

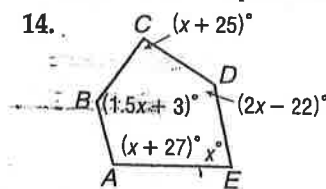9. 6 **120**   10. 15 **156**   11. 4 **90**   12. 20 **162**

ALGEBRA Find the measure of each interior angle. *See Example 3 on page 405.*

13.

$a = 108$
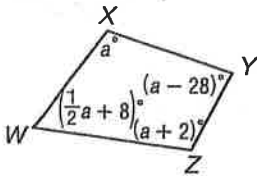
$m \angle W = 62$ $W \angle X = 108$ $m \angle Y = 80$ $m \angle Z = 110$

14.

$m \angle A = 105$
$m \angle B = 120$
$m \angle C = 103$
$m \angle D = 134$
$m \angle E = 78$
$x = 78$

Exercises Use ▱ABCD to find each measure.
See Example 2 on page 413.

15. $m \angle BCD$ **52**
16. AF **6.86**
17. $m \angle BDC$ **87.9**
18. BC **9**
19. CD **6**
20. $m \angle ADC$ **128**
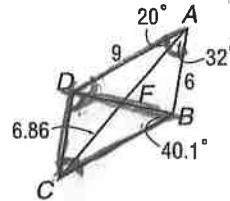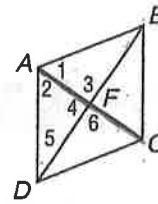
Exercises ABCD is a rectangle.
See Examples 1 and 2 on pages 425 and 426.

24. If $AC = 9x - 1$ and $AF = 2x + 7$, find AF. **13**
25. If $m \angle 1 = 12x + 4$ and $m \angle 2 = 16x - 12$, find $m \angle 2$. **52**
26. If $CF = 4x + 1$ and $DF = x + 13$, find x. **4**
27. If $m \angle 2 = 70 - 4x$ and $m \angle 5 = 18x - 8$, find $m \angle 5$. **28**
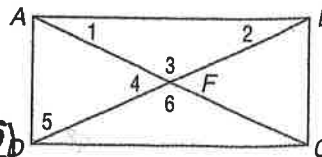
Exercises Use rhombus $ABCD$ with $m\angle 1 = 2x + 20$, $m\angle 2 = 5x - 4$, $AC = 15$, and $m\angle 3 = y^2 + 26$. *See Example 2 on page 432.*
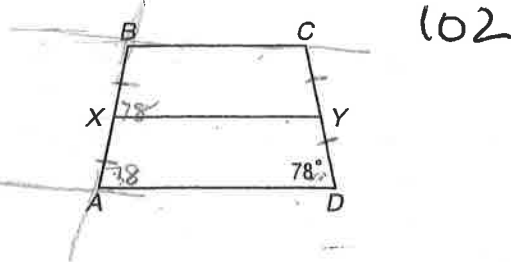
30. Find x. **8**
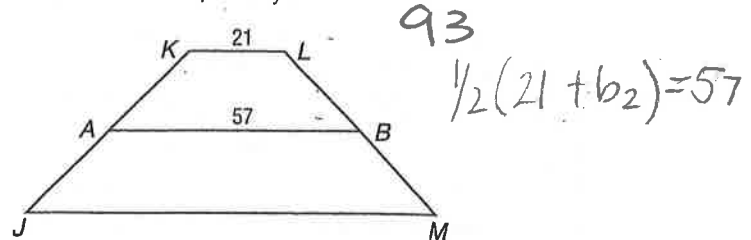31. Find AF. **7.5**
32. Find y. **8 or −8**

Exercises Find the missing value for the given trapezoid.
See Example 4 on page 441.

33. For isosceles trapezoid $ABCD$, X and Y are midpoints of the legs. Find $m\angle XBC$ if $m\angle ADY = 78$.
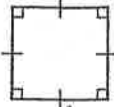
    102

34. For trapezoid $JKLM$, A and B are midpoints of the legs. If $AB = 57$ and $KL = 21$, find JM.

    93
    $$\tfrac{1}{2}(21 + b_2) = 57$$

Exercises Name each polygon by its number of sides. Then classify it as *convex* or *concave* and *regular* or *irregular*. *See Example 1 on page 46.*
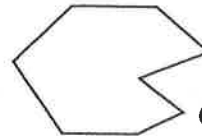
42.
**quadrulateral
convex
regular**

43.
**NOT A Polygon
not a polygon**

44.
**octagon
concave
irregular**