

Name key Class _____ Date _____

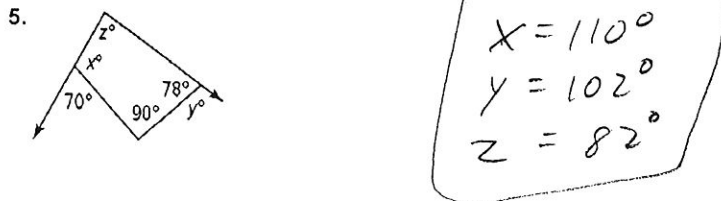
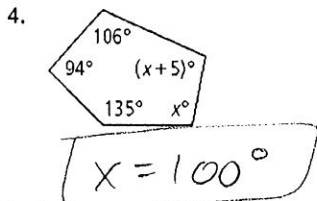
Lesson 6-1

Chapter 6

Find the sum of the interior angle measures of each polygon.

1. octagon 1080° 2. 16-gon 2520° 3. 42-gon 7200°

Find the missing angle measures.

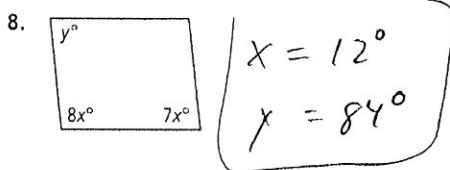


Find the measure of one interior angle and the measure of one exterior angle in each regular polygon.

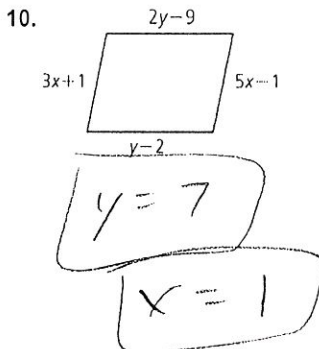
6. nonagon $140^\circ/40^\circ$ 7. 20-gon $162^\circ/18^\circ$

Lesson 6-2

Find the values of the variables in each parallelogram.

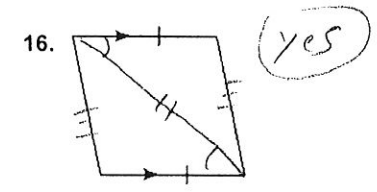
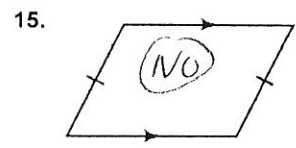
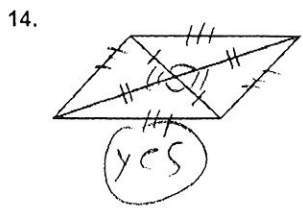
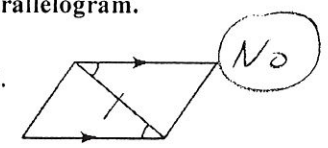
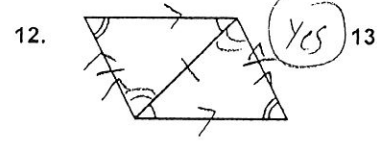
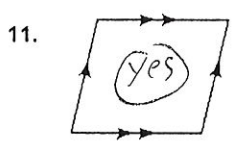


$4x - 5 + 2x + 5 = 180^\circ$



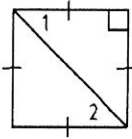
$6x = 180$
 $x = 30^\circ$
 $y = 55^\circ$

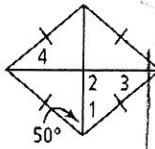
Based on the markings, decide whether each figure must be a parallelogram.

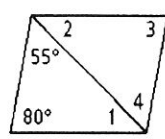


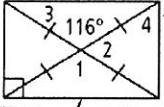
Lessons 6-4 and 6-5

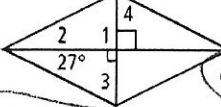
For each parallelogram, determine the most precise name and find the measures of the numbered angles.

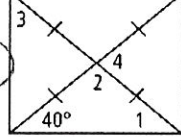
17.  **square**
 $m\angle 1 = m\angle 2 = 45^\circ$

18.  **Rhombus**
 $m\angle 1 = 50^\circ$
 $m\angle 2 = 90^\circ$
 $m\angle 3 = 40^\circ$
 $m\angle 4 = 40^\circ$

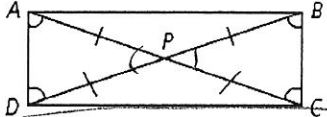
19.  **Quadrilateral**
 no solution for 2, 3, or 4
 $m\angle 1 = 45^\circ$

20.  **rectangle**
 $m\angle 1 = 116^\circ$
 $m\angle 2 = 64^\circ$
 $m\angle 3 = 32^\circ$
 $m\angle 4 = 58^\circ$

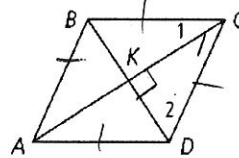
21.  **Quadrilateral**
 no solution for 4 or 2
 $m\angle 1 = 90^\circ$
 $m\angle 3 = 63^\circ$

22.  **rectangle**
 $m\angle 1 = 40^\circ$
 $m\angle 2 = 100^\circ$
 $m\angle 4 = 80^\circ$
 $m\angle 3 = 50^\circ$

23. Use the information in the figure. Explain how you know that $ABCD$ is a rectangle.


diagonals are congruent and bisect.

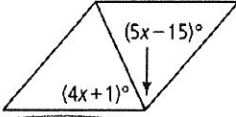
24. $\square ABCD$ is a rhombus. What is the relationship between $\angle 1$ and $\angle 2$? Explain.



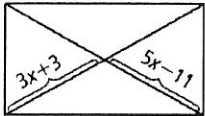
$\angle 1$ & $\angle 2$ are complementary

What value of x makes each figure the given special parallelogram?

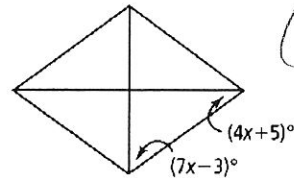
25. rhombus


 $x = 16^\circ$

26. rectangle


 $x = 7$

27. Rhombus

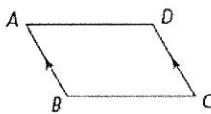


$x = 8^\circ$

28. Why is it that the statement "all rhombuses are squares" is false, but the statement "all squares are rhombuses" is true? Explain.

a rhombus doesn't need 4 right angles, but a square need 4 congruent sides

29. What additional pieces of information could be supplied to make $ABCD$ a parallelogram?



$\overline{AB} \cong \overline{DC}$ or $\overline{AD} \parallel \overline{BC}$

30. The diagonals of a parallelogram are 2.3 cm and 3.2 cm long. Can you tell if the parallelogram is a rhombus? Explain.

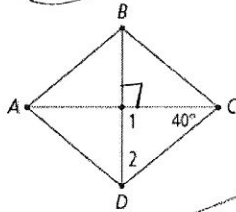
NO because you don't know if the diagonals are perpendicular



← Counter example

31. For this exercise, identify the error(s) in planning the solution or solving the problem. Then write the correct solution..

What are the measures of the numbered angles in rhombus ABCD?



This is only true if the rhombus is also a square!

$$m\angle 1 + m\angle 2 + 40^\circ \neq 180^\circ$$

$m\angle 1 = 90$ Diagonals of a rhombus are \perp .
 $\angle BDC \cong \angle ACD$, so $m\angle 2 = 40$

$$m\angle 1 = 90^\circ$$

$$m\angle 2 = 50^\circ$$

← correct solution