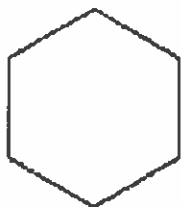


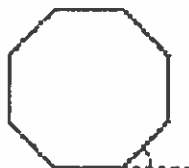
Chapter 8, Advanced Geometry Test

1. The sum of the measures of the interior angles of a convex quadrilateral is _____.
 - a. 180°
 - b. 270°
 - c. 360°
 - d. 540°

2. The measure of each interior angle of a regular hexagon is _____.



- a. 30°
 - b. 120°
 - c. 15°
 - d. 60°
3. The measure of each exterior angle of a regular octagon is _____.



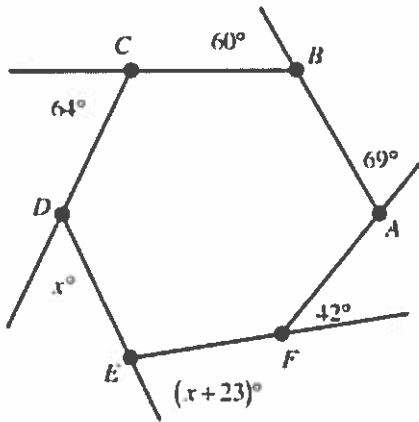
- a. 22.5°
- b. 67.5°
- c. 45°
- d. 135°

Name: _____

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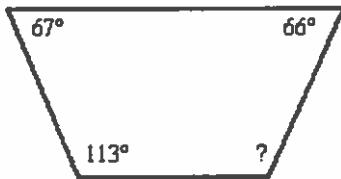
Find the value of x . (The figure may not be drawn to scale.)

4.



- a. 74
- b. 108
- c. 49
- d. 51

5. Find the measure of the missing angle.



6. What is the measure of each interior angle in a regular octagon?

7. Find the number of sides of a convex polygon if the measures of its interior angles have a sum of 2880° .

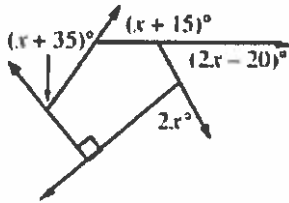
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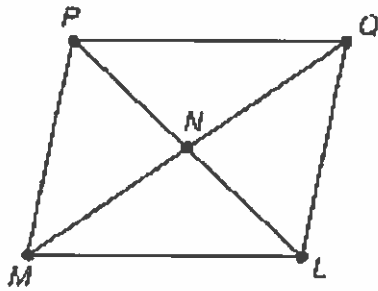
8. Find the measure of an interior angle and an exterior angle of a regular polygon with 20 sides.

Find each unknown angle measure.

9.

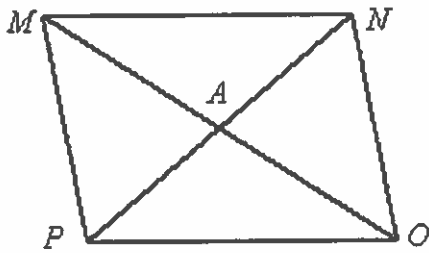


10. For parallelogram $PQLM$ below, if $m\angle PML = 83^\circ$, then $m\angle PQL =$ _____ .



- a. $m\angle PQM$
- b. 83°
- c. 97°
- d. $m\angle QLM$

11. Find AM in the parallelogram if $PN = 10$ and $MO = 19$.



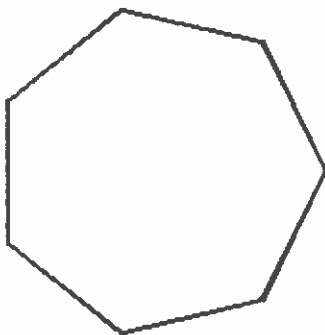
12. $(2, 3)$ and $(3, 1)$ are opposite vertices in a parallelogram. If $(0, 0)$ is the third vertex, then the fourth vertex is _____.
- a. $(1, -1)$
 - b. $(\frac{5}{2}, 2)$
 - c. $(-1, 2)$
 - d. $(5, 4)$
13. The diagonals of a parallelogram always _____.
- a. are congruent
 - b. are parallel
 - c. bisect each other
 - d. are perpendicular
14. Which statement is NOT always true of a rhombus?
- a. The diagonals are perpendicular to each other.
 - b. The diagonals bisect each other.
 - c. Each diagonal is longer than at least one side.
 - d. The sum of the diagonals is less than the perimeter.
15. If the diagonals of a parallelogram are perpendicular, then the parallelogram is also what type of figure?

16. Isosceles trapezoid $JKLM$ has legs \overline{JK} and \overline{LM} , and base \overline{KL} . If $JK = 8x - 9$, $KL = 7x + 10$, and $LM = 10x + 2$, find the value of x .
- a. -1 c. 19
b. $-\frac{11}{2}$ d. $\frac{8}{3}$
17. Which type of quadrilateral has no parallel sides?
- a. rectangle
b. trapezoid
c. rhombus
d. kite
18. Use slope or the Distance Formula to determine the most precise name for the figure: $A(-1, -4)$, $B(1, -1)$, $C(4, 1)$, $D(2, -2)$.
- a. kite
b. trapezoid
c. rhombus
d. square
19. If all four sides of a quadrilateral are congruent, the quadrilateral is _____.
- a. a kite
b. a nonsquare rectangle
c. a rhombus
d. a trapezoid
20. Which statement is false?
- a. All rhombuses are kites.
b. All squares are rhombuses.
c. Every kite is a rectangle.
d. All squares are quadrilaterals.
21. Which statement is false?
- a. Every square is a parallelogram.
b. Some rhombuses are rectangles.
c. Every rhombus is a quadrilateral.
d. Every parallelogram is a rhombus.

Name: _____

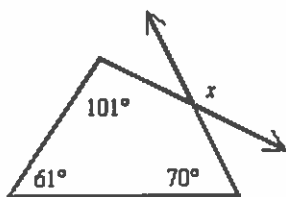
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22. Which statement is false?
- a. If a quadrilateral is a square, then it is not a kite.
 - b. Some parallelograms are rhombuses.
 - c. All parallelograms are quadrilaterals.
 - d. If a quadrilateral is a rectangle, then it is a kite.
23. How many triangles are formed by drawing diagonals from one vertex in the figure? Find the sum of the measures of the angles in the figure.



- a. 5, 900°
- b. 5, 1080°
- c. 6, 900°
- d. 6, 1080°

24. Find the value of x .



Name: _____

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25. A regular pentagon has five congruent interior angles. What is the measure of each angle?

26. Find the number of sides of a regular polygon with each interior angle equal to 171° .

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

27. 16-gon

28. 32-gon

29. Consecutive angles in a parallelogram are always _____.

- a. congruent angles
- b. complementary angles
- c. supplementary angles
- d. vertical angles

30. True or false: A rhombus is a regular polygon.

**Chapter 8, Advanced Geometry Test
Answer Section**

1. C
2. B
3. C
4. D
5. 114°
6. 135°
7. 18
8. interior angle: 162 degrees; exterior angle: 18 degrees
9. $55^\circ, 60^\circ, 75^\circ, 80^\circ$
10. B
11. 9.5
12. D
13. C
14. C
15. A rhombus
16. B
17. D
18. C
19. C
20. C
21. D
22. D
23. A
24. 128°
25. 108°
26. 40
27. $157.5^\circ, 22.5^\circ$
28. about 168.8° , about 11.2°
29. C
30. False