

Geometry CP
Chapter 6 Review

Name: Key

Date: _____ Period: _____

State whether the figure is a polygon; if it is a polygon, state whether the polygon is convex or concave.
HINT: No curves, no gaps, and no overlaps!

1. NO, curves



2. yes, concave



3. NO, overlaps



4. yes convex



Find the indicated measures of the polygon.

HINT: For interior angles use $(n - 2)180$ and for exterior angles use 360° .

5. Find the **SUM** of the measures of the interior angles of a octagon.

$$(8-2)180 = 1080^\circ$$

6. Find the **SUM** of the measures of the interior angles of a pentagon.

$$(5-2)180 = 540^\circ$$

7. Find the **SUM** of the measures of the exterior angles of a 24-gon.

$$360^\circ$$

8. Find the **SUM** of the measures of the exterior angles of a hexagon.

$$360^\circ$$

9. Find the measure of **EACH** interior angle of a regular decagon.

$$(10-2)180 =$$

$$1440 \div 10 = 144^\circ$$

10. Find the measure of **EACH** interior angle of a regular nonagon.

$$(9-2)180 =$$

$$1260 \div 9 = 140^\circ$$

11. Find the measure of **EACH** exterior angle of a heptagon.

$$360 \div 7 = 51\frac{3}{4}^\circ$$

12. Find the measure of **EACH** exterior angle of a 18-gon.

$$360 \div 18 = 20^\circ$$

13. How many sides does a regular polygon have, if the measure of an interior angle is 108° ?

$$180 - 108 = 72^\circ \text{ (Ext. } \angle)$$

$$360 \div 72 = 5 \text{ sides}$$

14. How many sides does a regular polygon have, if the measure of an interior angle is 60° ?

$$180 - 60 = 120 \text{ (Ext. } \angle)$$

$$360 \div 120 = 3 \text{ sides.}$$

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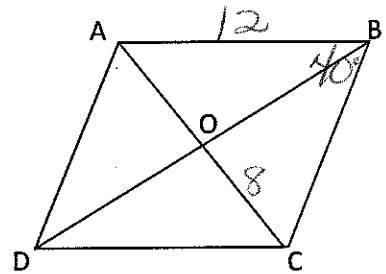
Parallelograms!

If a quadrilateral is a parallelogram then....

- 15. opposite sides are parallel and \cong
- 16. opposite angles are \cong
- 17. diagonals bisect each other.
- 18. consecutive angles are supplementary

ABCD is a parallelogram. $m\angle ABC = 40^\circ$, $AB = 12$, and $CO = 8$.

- 19. $m\angle BAD =$ 140°
- 20. $DC =$ 12
- 21. $m\angle BCD =$ 140°
- 22. $AO =$ 8



State whether each conditional statement is true. Write the converse of each conditional statement and state whether it is true.

- 23. If a parallelogram is a square, then it is a rhombus. TRUE
If a parallelogram is a rhombus, then it is a square. False
- 24. If a parallelogram is a square, then it is a rectangle. TRUE
If a parallelogram is a rectangle, then it is a square. False
- 25. If a quadrilateral is a rhombus, then it is a parallelogram. True
If a quadrilateral is a parallelogram, then it is a rhombus. False

If a parallelogram is a rhombus then

- 26. if all 4 sides are \cong
- 27. diagonals are perpendicular
- 28. diagonals bisect opposite angles

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If a parallelogram is a rectangle then

29. if it has 4 right angles

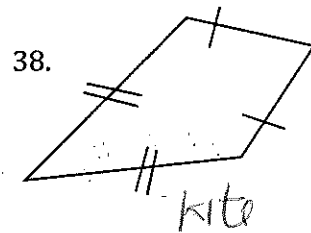
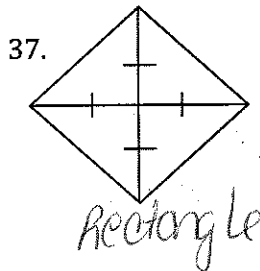
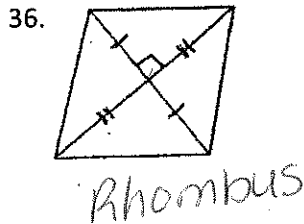
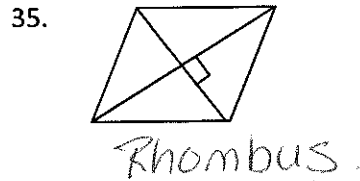
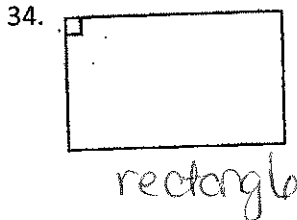
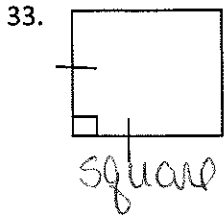
30. diagonals are \cong

If a parallelogram is a square then

31. if all 4 sides are \cong

32. if it has 4 right angles

Identify each parallelogram (rhombus, rectangle, square or parallelogram). Use the BEST fit.



BUCK is a parallelogram with diagonals intersecting at O. Use the given information to identify the BEST type of parallelogram (parallelogram, rectangle, rhombus, or square) that the information describes.

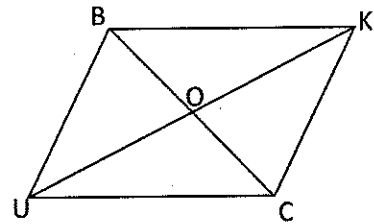
39. $\overline{BU} \perp \overline{UC}$, $\overline{BU} \cong \overline{BK}$

40. $\overline{BO} \cong \overline{CO}$, $\overline{UO} \cong \overline{KO}$

41. $\overline{BC} \cong \overline{UK}$

42. $\overline{BC} \perp \overline{UK}$

Square
parallelogram
Rectangle
Rhombus



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Match the properties of a quadrilateral with all of the types of quadrilateral which have that property.

43. The diagonals are congruent. *B, D*

44. Both pairs of opposite sides are congruent. *A-D*

45. Both pairs of opposite sides are parallel. *A-D*

46. All angles are congruent. *B, D*

47. All sides are congruent. *C, D*

48. Diagonals bisect the angles. *C, D*

A. Parallelogram

B. Rectangle

C. Rhombus

D. Square

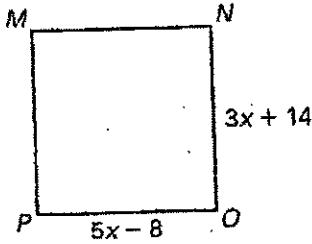
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Algebra!

58. Solve for x.

MNOP is a square.



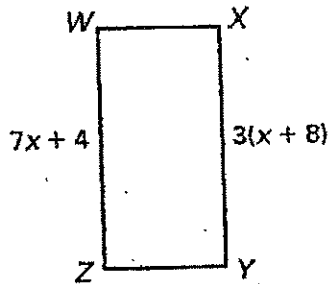
$$3x + 14 = 5x - 8$$

$$14 = 2x - 8$$

$$22 = 2x$$

$$x = 11$$

59. Solve for x.



$$7x + 4 = 3(x + 8)$$

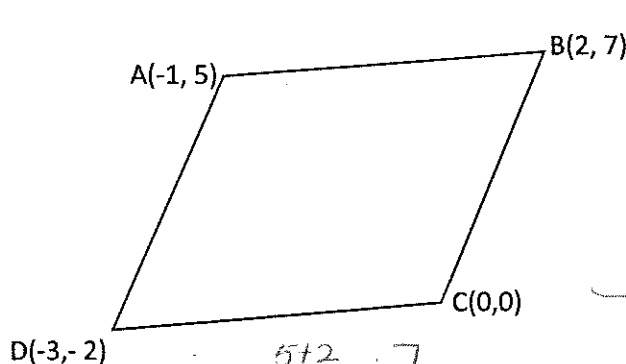
$$7x + 4 = 3x + 24$$

$$4x + 4 = 24$$

$$4x = 20 \quad x = 5$$

61. Show that ABCD is a parallelogram by showing one pair of opposite sides CONGRUENT and PARALLEL.

Distance Formula: $\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$ Slope Formula: $\frac{y_2 - y_1}{x_2 - x_1}$



$$m_{AD} = \frac{5 + 2}{-1 + 3} = \frac{7}{2}$$

$$m_{BC} = \frac{7 - 0}{2 - 0} = \frac{7}{2}$$

$$d_{AB} = \sqrt{\frac{(2+1)^2}{9} + \frac{(7-5)^2}{4}} = \sqrt{13}$$

$$d_{DC} = \sqrt{\frac{(0+3)^2}{9} + \frac{(0+2)^2}{4}} = \sqrt{13}$$

$$m_{AB} = \frac{7-5}{2+1} = \frac{2}{3} \quad m_{DC} = \frac{0+2}{0+3} = \frac{2}{3}$$

$$d_{AD} = \sqrt{\frac{(-1+3)^2}{4} + \frac{(5+2)^2}{49}} = \sqrt{53}$$

$$d_{BC} = \sqrt{(2-0)^2 + (7-0)^2} = \sqrt{53}$$