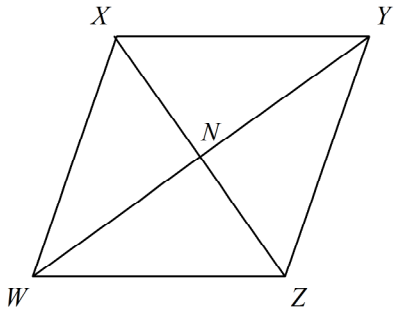
Name: _____ **Class:** _____ **Date:** _____ **ID: A**

Secondary 2 Unit 7 Test Study Guide 2014-2015

Multiple Choice
Identify the choice that best completes the statement or answers the question.

1. Which statement can you use to conclude that quadrilateral *XYZW* is a parallelogram?



   a. $\overline{XY} \cong \overline{WZ}$ and $\overline{YZ} \cong \overline{XW}$
   b. $\overline{XY} \cong \overline{WZ}$ and $\overline{YZ} \cong \overline{ZW}$
   c. $\overline{XY} \cong \overline{YZ}$ and $\overline{YZ} \cong \overline{XW}$
   d. $\overline{XN} \cong \overline{NY}$ and $\overline{ZN} \cong \overline{NW}$

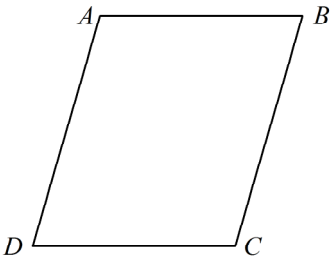
2. Which description does NOT guarantee that a quadrilateral is a square?
   a. is both a rectangle and a rhombus
   b. has all right angles and has all sides congruent
   c. is a parallelogram with perpendicular diagonals
   d. has all sides congruent and all angles congruent

3. Which statement is true?
   a. All parallelograms are rectangles.
   b. All rectangles are parallelograms.
   c. All quadrilaterals are rectangles.
   d. All quadrilaterals are squares.

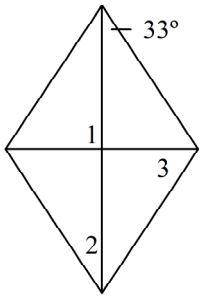
4. Which description does NOT guarantee that a quadrilateral is a kite?
   a. perpendicular diagonals, exactly one of which bisects the other
   b. perpendicular diagonals
   c. two distinct pairs of congruent adjacent sides
   d. one diagonal bisects opposite angles and the other diagonal does not

Short Answer

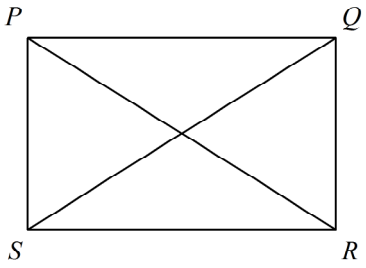
5. *ABCD* is a parallelogram. If $m\angle CDA = 69$, then $m\angle DAB =$ __?__. The diagram is not to scale.



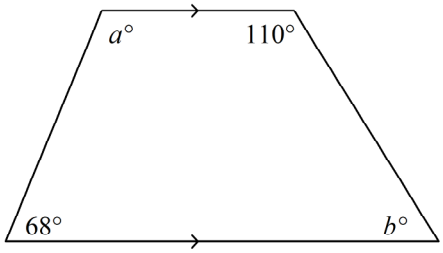
6. Find the measure of the numbered angles in the rhombus. The diagram is not to scale.



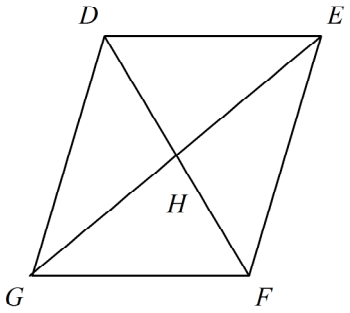
7. In rectangle *PQRS*, $PR = 18x - 29$ and $QS = x + 447$. Find the value of x and the length of each diagonal.



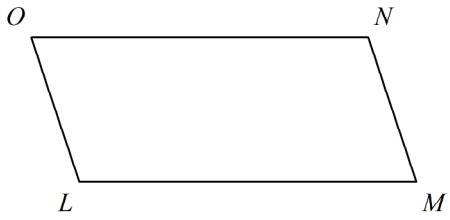
8. Find the values of a and b. The diagram is not to scale.



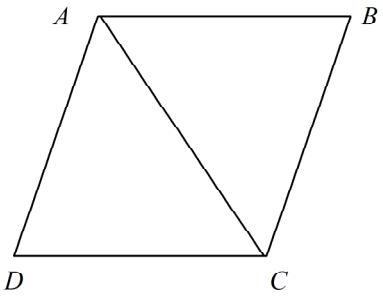
9. In parallelogram *DEFG*, $DH = x + 1$, $HF = 4y$, $GH = 2x - 5$, and $HE = 3y + 3$. Find the values of x and y. The diagram is not to scale.



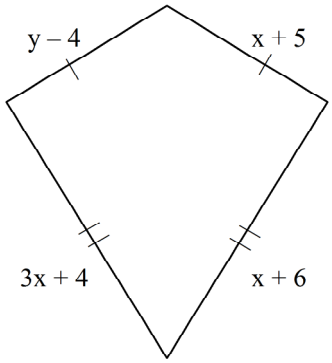
10. *LMNO* is a parallelogram. If $NM = x + 6$ and $OL = 2x + 4$, find the value of x and then find *NM* and *OL*.



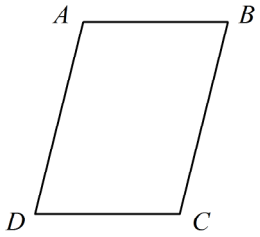
11. In quadrilateral $ABCD$, $m\angle ACD = 2x + 4$ and $m\angle ACB = 5x - 11$. For what value of x is $ABCD$ a rhombus?



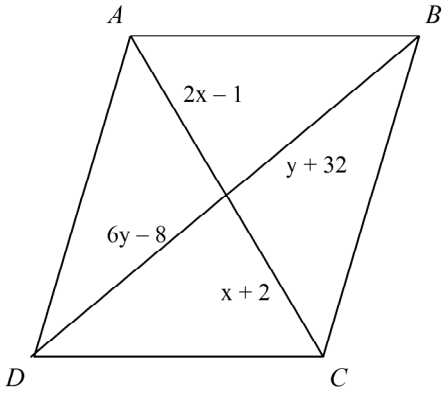
12. Find the values of the variables and the lengths of the sides of this kite.



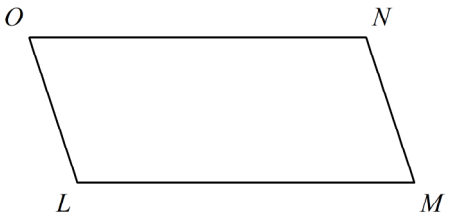
13. If $m\angle B = m\angle D = 44$, find $m\angle C$ so that quadrilateral $ABCD$ is a parallelogram. The diagram is not to scale.



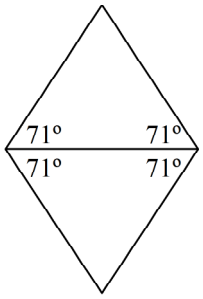
14. Find values of x and y for which $ABCD$ must be a parallelogram. The diagram is not to scale.



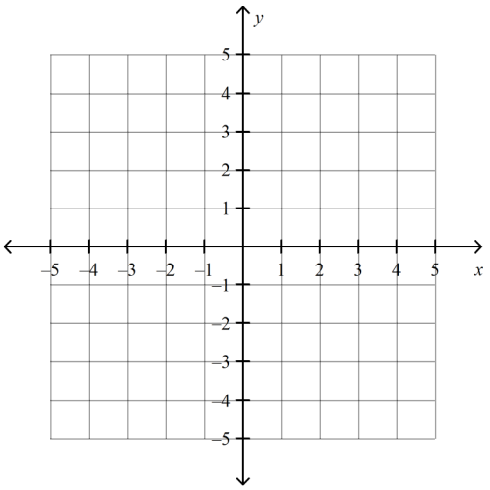
15. If $ON = 5x - 6$, $LM = 4x + 4$, $NM = x - 5$, and $OL = 4y - 3$, find the values of x and y for which $LMNO$ must be a parallelogram. The diagram is not to scale.



16. Parallelogram $ABCD$ has the angle measures shown. Can you conclude that it is a rhombus, a rectangle, or a square? Explain.

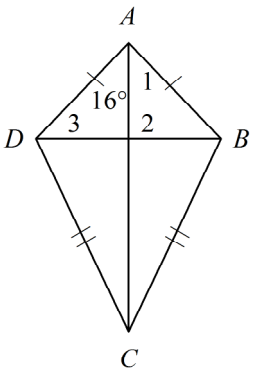


17. What is the most precise name for quadrilateral $ABCD$ with vertices $A(-3, 2)$, $B(-1, 5)$, $C(5, 5)$, and $D(3, 2)$?

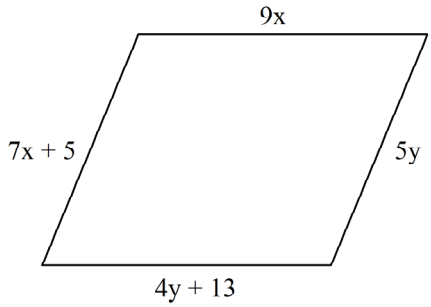


18. $\angle J$ and $\angle M$ are base angles of isosceles trapezoid $JKLM$. If $m\angle J = 15x + 3$, and $m\angle M = 14x + 15$, find $m\angle K$.

19. Find $m\angle 1$ and $m\angle 3$ in the kite. The diagram is not to scale.



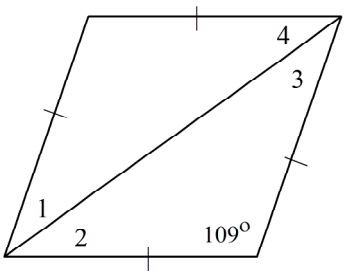
20. For what values of x and y must this quadrilateral be a parallelogram? Find the lengths of the sides. The diagram is not to scale.



x = **y =**

Side Lengths:

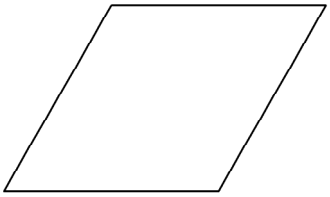
21. Give the name that best describes the parallelogram and find the measures of the numbered angles. The diagram is not to scale.



$\angle 1 =$ $\angle 2 =$

$\angle 3 =$ $\angle 4 =$

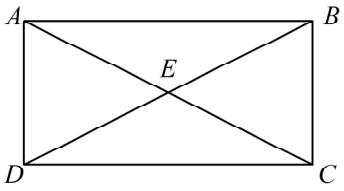
22. Judging by appearance, classify the figure in as many ways as possible using *rectangle*, *square*, *quadrilateral*, *parallelogram*, *rhombus*.



23. Isosceles trapezoid $ABCD$ has legs $\overline{AB}$ and $\overline{CD}$, and base $\overline{BC}$. If $AB = 4y - 5$, $BC = 4y - 3$, and $CD = 5y - 13$, find the value of y.

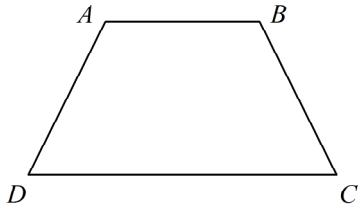
y =

24. In quadrilateral $ABCD$, $AE = x + 14$ and $BE = 3x - 18$. For what value of x is $ABCD$ a rectangle?

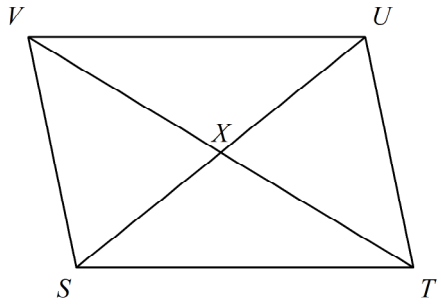


Long Answer

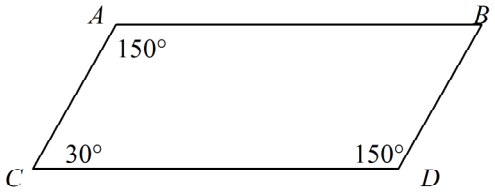
25. Write a paragraph proof to show that the base angles of an isosceles trapezoid are congruent.



26. **Given:** $\overline{SV} \parallel \overline{TU}$ and $\Delta SVX \cong \Delta UTX$
Prove: *VUTS* is a parallelogram



27. Is the quadrilateral a parallelogram? Explain. The diagram is not to scale.

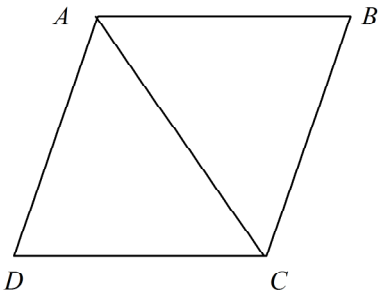


Answer (Circle One): Yes or No

Explanation:

28. Explain how you can determine, without measuring any angles, whether a quadrilateral is a rectangle.

29. *ABCD* is a rhombus. Explain why $\Delta ABC \cong \Delta CDA$.



30. Give a convincing argument that quadrilateral *ABCD* with *A*(–5, –4), *B*(–3, –2), *C*(5, –2), and *D*(3, –4) is a parallelogram. You can use the graph if neeeded to plot points and graph the shape.