

5.8 Guess My Parallelogram

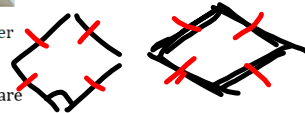
A Practice Understanding Task



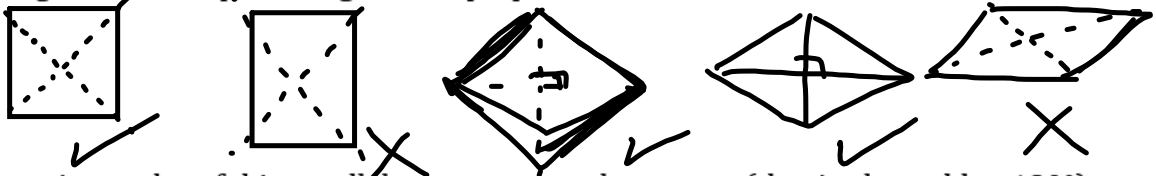
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Tehani and Tia are playing a guessing game in which one person describes some of the features of a parallelogram they have drawn and the other person has to name the type of parallelogram: square, rectangle or rhombus.

Here are some of the clues they gave each other. Decide what type of parallelogram they are describing, and explain how you know.



- The diagonals of this parallelogram are perpendicular to each other.



- Consecutive angles of this parallelogram are supplementary (that is, they add to 180°).



- The diagonals of this parallelogram are congruent.

- When rotated 90° , each diagonal of this parallelogram gets superimposed on top of the other.

- Consecutive angles of this parallelogram are congruent.

- The diagonals of this parallelogram are congruent and perpendicular to each other.

SECONDARY MATH II // MODULE 5
 GEOMETRIC FIGURES - 5.8

Start 5.8 with compass 5.8

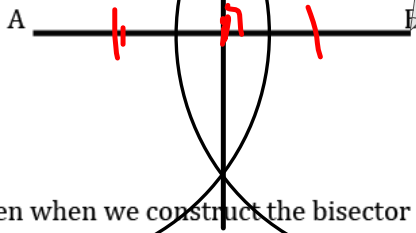
READY, SET, GO! Name _____ Period _____ Date _____

READY

Topic: Constructing perpendicular bisectors and angle bisectors

Use a compass and a straightedge to bisect the following line segments.

1.



2.

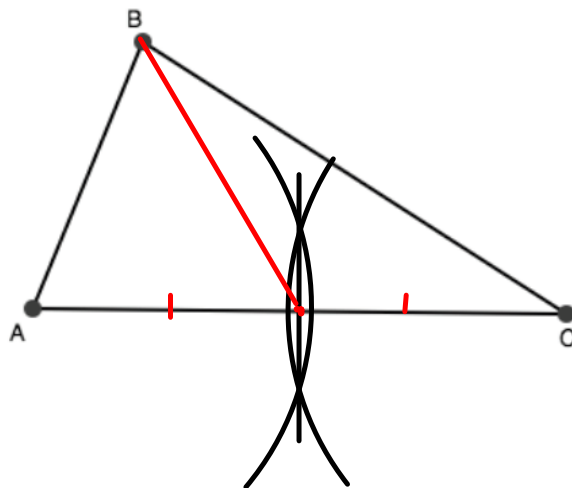


3. Often when we construct the bisector of a segment, we are also constructing the perpendicular bisector. Must a bisector of a segment always be a perpendicular line?

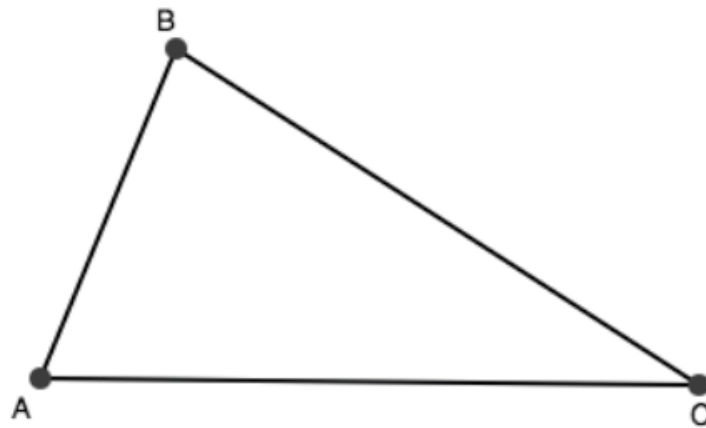
4. Construct the midpoint B of \overline{MS} .
 Then connect point B to point H .



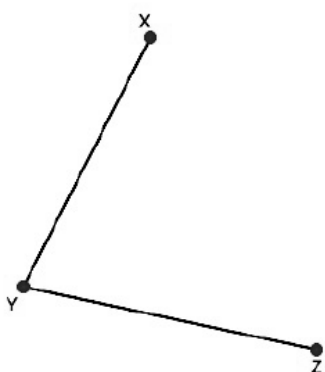
5. Construct the 3 medians of $\triangle ABC$.



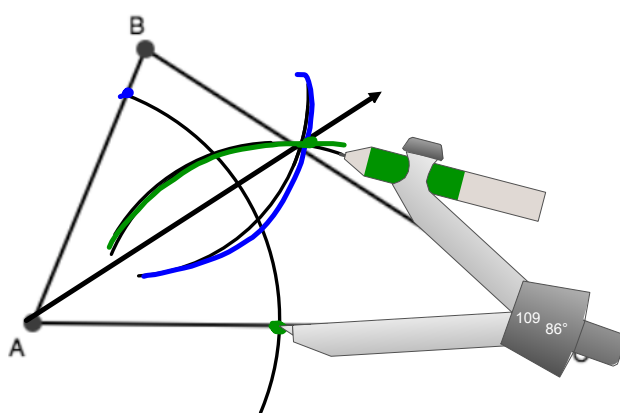
6. Construct the 3 perpendicular bisectors of $\triangle ABC$.



7. Construct the angle bisector of $\angle XYZ$.



8. Construct the 3 angle bisectors of $\triangle ABC$.



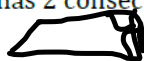
SET

Topic: Properties of parallelograms

Determine whether each quadrilateral is a parallelogram. Write YES if it is. If you can find an example that is NOT a parallelogram, make a sketch of the non-example.

9. 1 pair of opposite sides is parallel and it has 2 consecutive right angles

No

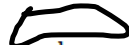


10. The quadrilateral has 4 right angles.

11. 1 pair of opposite sides is parallel and congruent

12. 1 pair of opposite sides is parallel. The other pair of opposite sides is congruent.

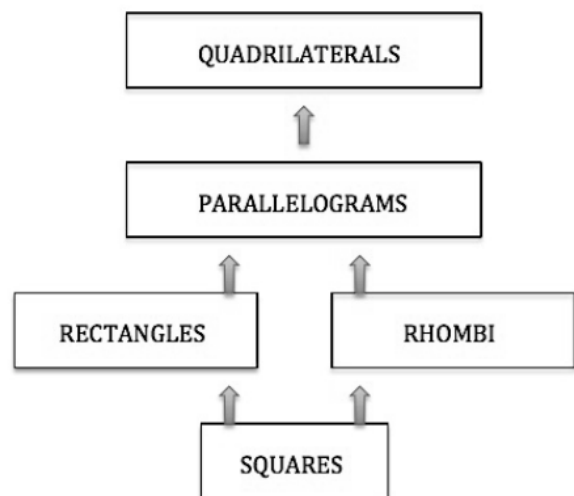
NO



13. All consecutive angles are supplementary.

14. The diagonals are perpendicular.

15. The flowchart on the right has the most general 4-sided polygon at the top and the most specific one at the bottom. Around each box, write in the details that make the specific quadrilateral unique.



Explain why the arrows point up instead of down.

GO

Topic: Features of triangles and quadrilaterals

State whether each statement is *true* or *false*. If it is false, explain why or rewrite the statement to make it true.

16. If a triangle is equilateral, then the median and the altitude are the same segments.
17. The perpendicular bisectors of the sides of a triangle also bisect the angles.
18. ~~Some of the angles in a triangle equal 180° .~~ *false*
19. An altitude of a triangle may fall on the exterior of the triangle.
20. The 3rd angle in a triangle is always the supplement to the sum of the other 2 angles.
21. In a right triangle, the 2 acute angles are always complementary.
22. All squares are also rectangles.
23. A rhombus is always a square.
24. If a figure is a trapezoid, then it is also a parallelogram.
25. The diagonals of a rectangle bisect the angles.
26. A parallelogram can have 3 obtuse angles.
27. The figure made by two pair of intersecting parallel lines is always a parallelogram.
28. All of the angles in a parallelogram can be congruent.
29. A diagonal always divides a quadrilateral into 2 congruent triangles.
30. If a quadrilateral goes through a translation, the sides of the pre-image and image will remain parallel.

