

## Ready, Set, Go!



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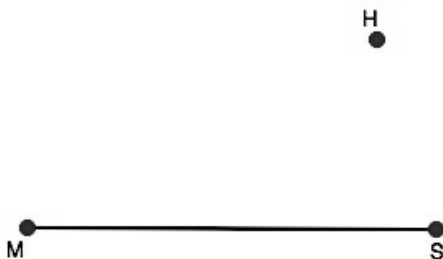
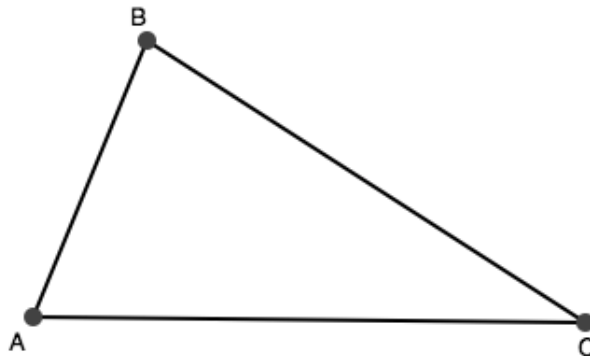
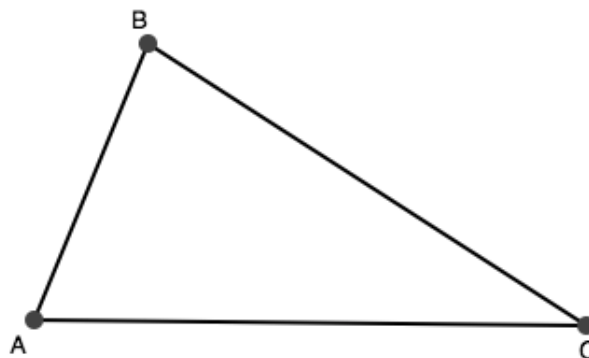
## Ready

Topic: Constructing perpendicular bisectors and angle bisectors

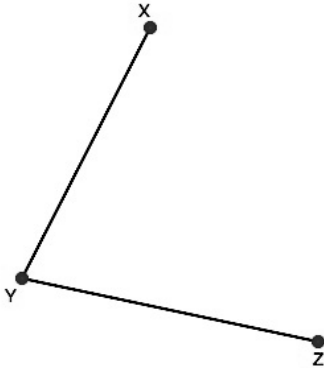
Use a compass and a straightedge to bisect the following line segments.

1. A  B2. T  S

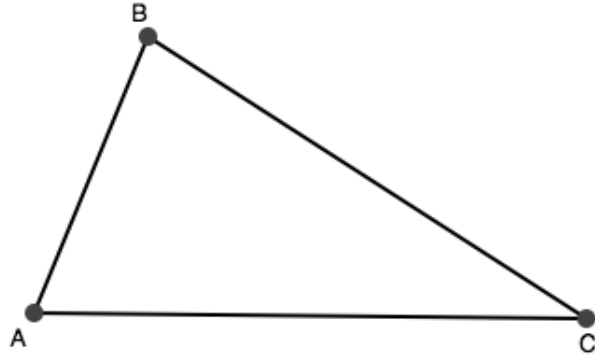
3. When we construct the bisector of a segment, we are also constructing the perpendicular bisector. Must a bisector of a segment always be a perpendicular line?

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  $\triangle ABC$ .

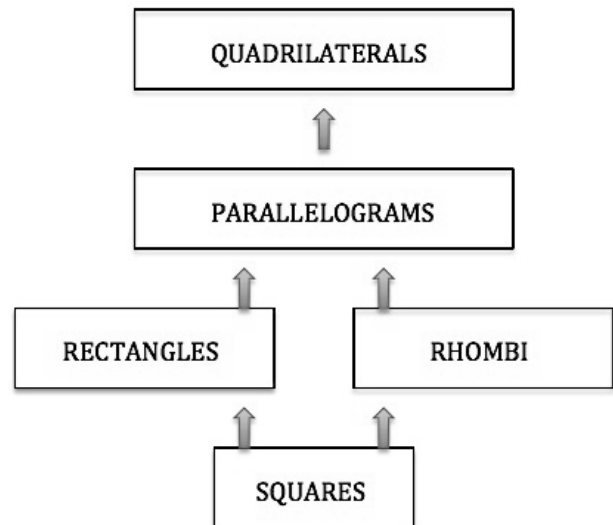


**Set**

Topic: Tests for parallelograms

**Determine whether each quadrilateral is a parallelogram. Write YES if it is. If it is NOT a parallelogram, make a sketch of a quadrilateral that has the given features.**

9. 1 pair of opposite sides is parallel and it has 2 consecutive right angles
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.
13. 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  $180^\circ$ .
19. An altitude of a triangle may fall on the exterior of the triangle.
20. The 3<sup>rd</sup> 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.

