Activity 7 — Centroid and Orthocenter

Objectives

This activity is designed to help students recognize the following properties:

- ✔ *The medians of a triangle have only one point of intersection, called the centroid.*
- ✔ *If a triangle is acute, then the centroid lies inside the triangle.*
- ✔ *If a triangle is obtuse, then the centroid lies inside the triangle.*
- ✔ *If a triangle is right, then the centroid lies inside the triangle.*
- ✔ *The altitudes of a triangle have only one point of intersection, called the orthocenter.*
- ✔ *If a triangle is acute, then the orthocenter lies inside the triangle.*
- ✔ *If a triangle is obtuse, then the orthocenter lies outside the triangle.*
- ✔ *If a triangle is right, then the orthocenter lies on the triangle.*

Vocabulary

triangle
altitude
acute
obtuse
median
intersection
right

Prerequisites

Students must understand how to:

- ✔ *Construct and label a triangle.*
- ✔ *Measure and label angles.*

Answers

5. *W* is inside the triangle.

7. If a triangle is acute, then the centriod lies inside the triangle.

9. *W* is inside the triangle.

11. If a triangle is obtuse, then the centriod lies inside the triangle.

13. *W* is inside the triangle.

15. If a triangle is right, then the centriod lies inside the triangle.

21. *W* is inside the triangle.

23. If a triangle is acute, then the orthocenter lies inside the triangle.

25. *W* is outside the triangle.

27. If a triangle is obtuse, then the orthocenter lies outside the triangle.

29. *W* is on the triangle.

31. If a triangle is right, then the orthocenter lies on the triangle.

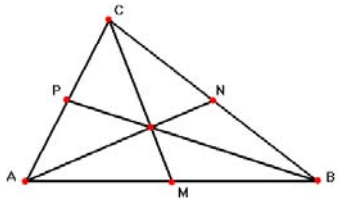

Figure A.6