CHAPTER 7 - SIMILAR POLYGONS

Objectives/Goals

7-1 – Ratio and Proportion

Be able to recall properties of ratios from algebra, and express ratios in simplest form

7-2 - Properties of Proportions

Be able to solve and manipulate proportions

7-3 – Similar Polygons

Be able to state and apply theorems for similar polygons

7-4 – A postulate for similar triangles

Use AA postulate to set up proportions involving similar triangles

7-5 – Theorems for similar Triangles

Be able to use ASA and SAS similarity theorems to prove two triangles are similar 7-6 – **Proportional lengths**

7-6 – Proportional lengths

Be able to recognize and utilize theorems involving proportions in triangles

Essential Questions

- 1.) What are the different forms and uses of a ratio?
- 2.) What is the use of the means extremes property?
- 3.) What are the ways we can prove triangles similar?
- 4.) How do corresponding sides of similar figures relate?
- 5.) What are the ways to get proportional segments?

Chapter 7 terms to know

Ratio Proportion Means Extremes Scale Similar polygons Scale factor Divide proportionally

CHAPTER 7

- Postulate 15 AA if two angles of one triangle are congruent to two angles of another triangle, then the triangles are similar.
- Theorem 7-1 SAS Similarity If an angle of one triangle is congruent to an angle of another triangle and the sides including those angles are in proportion, then the triangles are similar.
- Theorem 7-2 SSS Similarity If the sides of two triangles are in proportion, then the triangles are similar.
- Theorem 7-3 Triangle Proportionality Theorem If a line parallel to one side of a triangle intersects the other two sides, then it divides those sides proportionally.
 - Corollary If three parallel lines intersect two transversals, then they divide the transversals proportionally.
- Theorem 7-4 Triangle-Angle Bisector Theorem If a ray bisects an angle of a triangle, then it divides the opposite side into segments proportional to the other two sides.