Learning Objectives for Chapter Five

Similar Triangles

Learning objectives indicate what you should be able to do upon completing your work in each of the textbook sections.

Section 5.1: Ratios, Rates, and Proportions
1. state/apply the terms ratio, rate, and proportion;
2. know the terminology (means, geometric mean, etc.) related to proportions;
3. state/apply the Means-Extremes Property (of a proportion); and
4. understand/apply further' properties of proportions.

Section 5.2: Similar Polygons and Triangles
1. form an intuitive understanding of the concept "similarity of figures";
2. determine the correspondences between the pairs of similar polygons;
3. state/apply the definition of similar polygons;
4. state/apply the AA corollary;
5. recognize/apply CSSTP, meaning "Corresponding sides of similar triangles are proportional;" and
6. recognize SAS- and SSS- as methods of verifying that triangles are similar.

Section 5.3: The Pythagorean Theorem
1. state/prove/apply Theorem 5.6.1 in establishing later theorems;
2. state/apply/prove theorems involving geometric means in the right triangle;
3. state/apply the Pythagorean Theorem and its converse;
4. determine whether (a,b,c) is a Pythagorean Triple; and
5. determine whether a triangle is acute, right, or obtuse based upon the lengths of sides.

Section 5.4: Special Right Triangles
1. state/prove/prove the 45°-45°-90° Theorem;
2. state/prove/prove the 30°-60°-90° Theorem; and
3. recognize/apply the equivalent theorems ( Theorems 5.4.3 and 5.4.4 ).

Section 5.5: Segments Divided Proportionally
1. form an intuitive understanding of the concept "segments divided proportionally";
2. state/apply the definition or segments divided proportionally;
3. state/apply/prove the theorem that establishes that parallel lines determine proportional segments on transversals; and
4. state/apply the theorem, "The angle-bisector in a triangle separates tile opposite side into segments whose lengths have the same ratio as the lengths of the sides of the bisected angle."