Vocabulary Study Guide: Proportions

Congruent: same shape and same size.

Similar: same shape, sides are proportional in length, and corresponding angles are congruent.

Proportion: a statement of equality between two ratios.

Ratio: used to compare two quantities.

Rate: a ratio that compares two quantities measured in different units.

Unit Rate: a rate with a denominator of 1.

Percent: a special ratio in which the denominator is 100.

Scale Factor: The ratio of any two corresponding lengths in two similar geometric figures.

Term: a number or variable; parts of an expression separated by + or – signs.

Corresponding: matching or same position in different plane figures.

**7.4 The student will solve single-step and multistep practical problems, using proportional reasoning**

**The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to**

• Write proportions that represent equivalent relationships between two sets.

• Solve a proportion to find a missing term.

• Apply proportions to convert units of measurement between the U.S. Customary System and the metric system. Calculators may be used.

• Apply proportions to solve practical problems, including scale drawings. Scale factors shall have denominators no greater than 12 and decimals no less than tenths**.** Calculators may be used.

• Using 10% as a benchmark, mentally compute 5%, 10%, 15%, or 20% in a practical situation such as tips, tax and discounts.

• Solve problems involving tips, tax, and discounts. Limit problems to only one percent computation per problem.

**7.6 The student will determine whether plane figures – quadrilaterals and triangles – are similar and write proportions to express the relationships between corresponding sides of similar figures.**

**The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to**

• Identify corresponding sides and corresponding and congruent angles of similar figures using the traditional notation of curved lines for the angles.

• Write proportions to express the relationships between the lengths of corresponding sides of similar figures.

• Determine if quadrilaterals or triangles are similar by examining congruence of corresponding angles and proportionality of corresponding sides.

• Given two similar figures, write similarity statements using symbols such as

Δ*ABC* ~ Δ*DEF* ,∠ *A* corresponds to ∠*D*, and *AB* corresponds to *DE* .