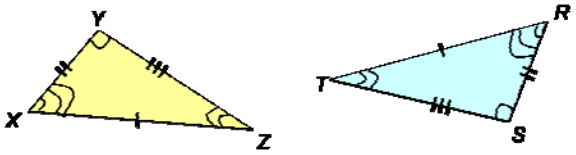
Geometry Core Concept Cheat Sheet

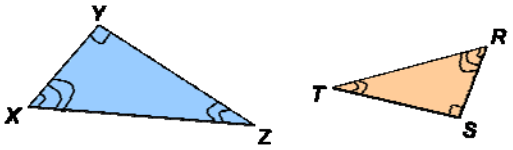
01: Introduction to Geometry

Key Terms

- **Angle:** a figure consisting of two rays with a common endpoint.
- **Circle:** a set of points that are a fixed distance from a given point, known as the center.
- **Congruent triangles:** triangles that have corresponding parts that are the same measure.

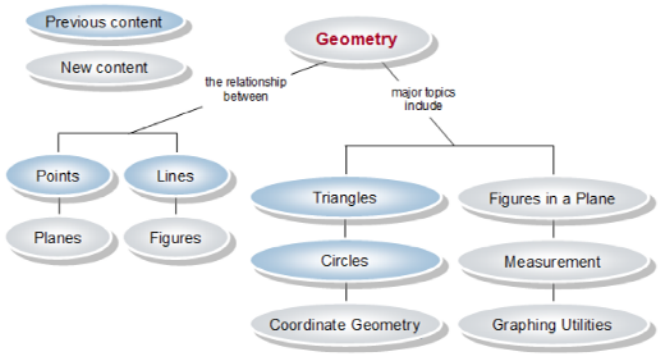


- **Coordinate geometry:** the study of geometric figures using the coordinate plane.
- **Deductive reasoning:** uses facts and rules to reach a logical conclusion.
- **Geometry:** the branch of mathematics concerned with the properties of and relationships between points, lines, planes, and figures, and with generalizations of these concepts.
- **Inductive reasoning:** uses patterns of evidence to make a plausible prediction.
- **Line:** a figure formed by connecting two points and extending beyond each point in both directions; represented with arrows on each end.
- **Parallel lines:** lines in the same plane that do not intersect.
- **Perpendicular lines:** two lines that intersect to form a right angle.
- **Plane:** a flat surface that extends indefinitely in all directions; represented by a parallelogram.
- **Point:** the result of the intersection of two lines; represented by a dot.
- **Quadrilateral:** a polygon with four sides.
- **Radius:** a segment whose endpoints are the center of a circle and a point on that circle.
- **Ray:** part of a line starting at a point and extending infinitely in one direction.
- **Right triangle:** a triangle with a right angle.
- **Segment:** part of a line consisting of two endpoints and all the points between them.
- **Similar triangles:** triangles that have congruent corresponding angles and the measures of corresponding sides are proportional.



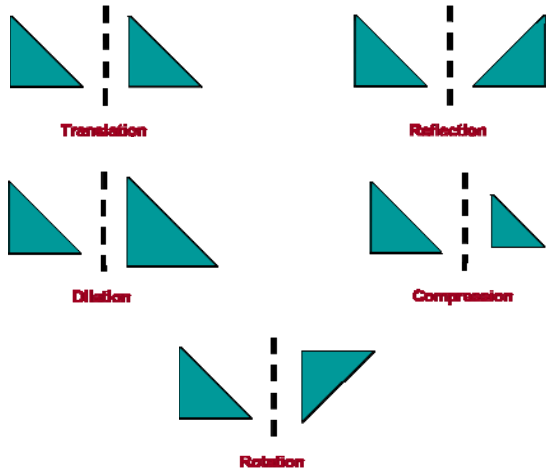
- **Transformation:** a point by point mapping of a figure in a plane.
- **Triangle:** a polygon with three sides.
- **Trigonometric ratio:** a ratio of lengths of sides of a right triangle.

Concept Map



Transformations

The standard transformations include:



Geometry Skills & Tips

The basic skills needed for learning geometry:

- The ability to accurately measure using a ruler, compass, and protractor.
- The ability to construct geometric figures using a ruler, compass, and protractor.
- Understand the vocabulary, theorems, and postulates presented in the course.

To help while studying geometry:

- Create vocabulary flash cards that include a drawing along with the definition.
- Verbalize each definition and property.
- Study your notes and graded assignments. Redo any problems marked wrong.
- Find a study buddy or group.

Keep the following in mind while preparing for an exam:

- Practice problems with radicals and perfect squares.
- All lines are straight unless otherwise stated.
- Apply what you know about shapes and not what you see in a diagram.
- If you can find the value for any one of the following in a circle, you can find the rest: radius, diameter, area, and circumference.

How to Use This Cheat Sheet: These are the keys related this topic. Try to read through it carefully twice then recite it out on a blank sheet of paper. Review it again before the exams.

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