

Unit 1 | Similarity, Congruence, and Proofs

Standard Code	Mastery Level	Standard
G.SRT.1		Verify experimentally the properties of dilations given by a center and a scale factor.
G.SRT.1.a		Show that a dilation takes a line which does not pass through the center of the dilation to a parallel line.
		Show that a dilation leaves a line which does pass through the center of the dilation unchanged.
G.SRT.1.b		Show that the dilation of a line segment is longer or shorter in the ratio given by the scale factor.
G.SRT.2		Use the idea of dilation transformations to develop the definition of similarity.
		Given two figures determine whether they are similar and explain their similarity based on the equality of corresponding angles and the proportionality of corresponding sides.
G.SRT.3		Use the properties of similarity transformations to develop the Angle-Angle criteria for proving two triangles are similar.
G.SRT.4		Use AA, SAS, and SSS similarity theorems to prove triangles are similar.
		Use triangle similarity to prove that a line parallel to one side of a triangle divides the other two sides of the triangle proportionally, and it's converse
		Use triangle similarity to prove that if a line intersects a triangle so that two of its sides are divided proportionally, the line is parallel to the third side of the triangle.
		Use triangle similarity to prove the Pythagorean Theorem.
G.SRT.5		Use congruent and similar triangles to solve problems.
		Use congruent and similar triangles in proofs.
G.CO.6		Use geometric descriptions of rigid motion to transform figures and to predict the effect of a given rigid motion on a given figure.
		Given two figures, use the definition of congruence in terms of rigid motion to decide if they are congruent.
G.CO.7		Use the definition of congruence in terms of rigid motion to show that two triangles are congruent if and only if corresponding pairs of sides and corresponding pairs of angles are congruent.

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G.CO.8		Explain how the criteria for triangle congruence (ASA, SSS, and SAS) follow from the definition of congruence in terms of rigid motions.
G.CO.9		Prove vertical angles are congruent.
		Prove when a transversal crosses parallel lines, alternate interior angles are congruent.
		Prove when a transversal crosses parallel lines, corresponding angles are congruent.
		Prove that points on a perpendicular bisector of a line segment are equidistant from the endpoints of the segment.
G.CO.10		Prove the measures of interior angles of a triangle have a sum of 180° .
		Prove base angles of isosceles triangles are congruent.
		Prove the segment joining midpoints of two sides of a triangle is parallel to the third side and half its length.
		Prove the medians of a triangle meet at a point.
G.CO.11		Prove properties of parallelograms.
		Determine the necessary conditions to prove a figure is a parallelogram.
		Prove properties of rectangles.
G.CO.12		Perform basic constructions using a variety of tools and methods. <ul style="list-style-type: none"> • Copy a segment. • Copy an angle. • Bisect a segment. • Bisect an angle. • Construct perpendicular lines. • Construct the perpendicular bisector of a line segment. • Construct a line parallel to a given line through a point not on the line.
		Construct perpendicular lines.
G.CO.13		Construct an equilateral triangle so that each vertex of the equilateral triangle is on the circle.
		Construct a square so that each vertex of the square is on the circle.
		Construct a regular hexagon so that each vertex of the regular hexagon is on the circle.