**Virginia Standards of Learning Assessment**

**Geometry (2016 SOL) Performance Level Descriptors**

| **Fail/Does Not Meet** | **Pass/Proficient** | **Pass/Advanced** |
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| A student performing at this level should be able to: *Reporting Category 1: Reasoning, Lines, and Transformations*  * match a verbal argument to symbolic form * write the converse of a conditional statement * recognize angle relationships formed by two parallel lines and a transversal * recognize basic constructions * identify transformations of figures on a grid  *Reporting Category 2: Triangles*  * recognize congruence given measurements of two triangles * recognize similarity given measurements of two triangles * apply Pythagorean Theorem to determine existence of a right triangle  *Reporting Category 3: Polygons, Circles, and Three-Dimensional Figures*  * identify the center, radius, and diameter given the:   + equation of a circle, and   + graph of a circle * identify properties of quadrilaterals * compare interior and exterior angles of polygons * recognize relationships between attributes of similar two-dimensional and three-dimensional figures | A student performing at this level should be able to: *Reporting Category 1: Reasoning, Lines, and Transformations*  * determine validity of a logical argument * solve problems involving angles formed by parallel lines intersected by a transversal * complete basic constructions * use algebraic and coordinate methods to solve problems and prove lines parallel and perpendicular * apply transformations and combinations of transformations  *Reporting Category 2: Triangles*  * compare and order sides and angles in a triangle * find a range of values for a missing side in a triangle * use algebraic and coordinate methods to solve problems and complete deductive proofs involving:   + similar triangles,   + congruent triangles, and   + right triangles (including trigonometric functions)  *Reporting Category 3: Polygons, Circles, and Three-Dimensional Figures*  * use algebraic and coordinate methods to solve problems and complete deductive proofs involving:   + quadrilaterals,   + polygons, and   + parts of circles (including chords, secants, and tangents) * solve problems using attributes of two-dimensional and three-dimensional figures, including characteristics of similarity | A student performing at this level should be able to: *Reporting Category 1: Reasoning, Lines, and Transformations*  * analyze logical arguments using deductive reasoning * apply Euclidean methods to complete multistep constructions * integrate multiple analytical skills, including algebraic operations, to solve problems and/or complete multistep proofs involving:   + parallel and perpendicular lines,   + angles formed by parallel lines and transversals, and   + combinations of transformations  *Reporting Category 2: Triangles*  * integrate multiple analytical skills, including algebraic operations, to solve problems and/or complete multistep proofs involving:   + congruent triangles,   + similar triangles, and   + right triangles (including trigonometric functions)  *Reporting Category 3: Polygons, Circles, and Three-Dimensional Figures*  * integrate multiple analytical skills, including algebraic operations, to solve problems and/or complete multistep proofs involving:   + quadrilaterals,   + polygons, and   + parts of circles (including chords, secants, and tangents) * solve multistep problems involving two-dimensional and three-dimensional figures, including characteristics of similarity |