

Grade 8 Content Standards – Math (Geometry)

Standard	CST	CHSEE	Framework Emphasis	Algebra Readiness	Essential Standards	Essential Standards	
						S1	S2
Geometry	65 / 100%						
1.0 Students demonstrate understanding by identifying and giving examples of undefined terms, axioms, theorems, and inductive and deductive reasoning.	2		☆		✓	F	R
2.0 Students write geometric proofs, including proofs by contradiction.	3		☆		✓	F	R
3.0 Students construct and judge the validity of a logical argument and give counterexamples to disprove a statement.	4		☆		✓	F	R
4.0 Students prove basic theorems involving congruence and similarity.	5		☆		✓	F	R
5.0 Students prove that triangles are congruent or similar, and they are able to use the concept of corresponding parts of congruent triangles.	2						
6.0 Students know and are able to use the triangle inequality theorem.	1						
7.0 Students prove and use theorems involving the properties of parallel lines cut by a transversal, the properties of quadrilaterals, and the properties of circles.	5 2/3**		☆		✓	F	R
8.0 Students know, derive, and solve problems involving perimeter, circumference, area, volume, lateral area, and surface area of common geometric figures.	4		☆		✓		F
9.0 Students compute the volumes and surface areas of prisms, pyramids, cylinders, cones, and spheres; and students commit to memory the formulas for prisms, pyramids, and cylinders.	2						
10.0 Students compute areas of polygons, including rectangles, scalene triangles, equilateral triangles, rhombi, parallelograms, and trapezoids.	4		☆		✓		F
11.0 Students determine how changes in dimensions affect the perimeter, area, and volume of common geometric figures and solids.	1						
12.0 Students find and use measures of sides and of interior and exterior angles of triangles and polygons to classify figures and solve problems.	5		☆		✓		F

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13.0 Students prove relationships between angles in polygons by using properties of complementary, supplementary, vertical, and exterior angles.	2						
14.0 Students prove the Pythagorean theorem.	1/3**		☆		✓	F	R
15.0 Students use the Pythagorean theorem to determine distance and find missing lengths of sides of right triangles.	2						
16.0 Students perform basic constructions with a straightedge and compass, such as angle bisectors, perpendicular bisectors, and the line parallel to a given line through a point off the line.	4		☆		✓		F
17.0 Students prove theorems by using coordinate geometry, including the midpoint of a line segment, the distance formula, and various forms of equations of lines and circles.	3		☆		✓		F
18.0 Students know the definitions of the basic trigonometric functions defined by the angles of a right triangle. They also know and are able to use elementary relationships between them. For example, $\tan(x) = \sin(x)/\cos(x)$, $(\sin(x))^2 + (\cos(x))^2 = 1$.	3		☆		✓		F
19.0 Students use trigonometric functions to solve for an unknown length of a side of a right triangle, given an angle and a length of a side.	3						
20.0 Students know and are able to use angle and side relationships in problems with special right triangles, such as 30°, 60°, and 90° triangles and 45°, 45°, and 90° triangles.	1						
21.0 Students prove and solve problems regarding relationships among chords, secants, tangents, inscribed angles, and inscribed and circumscribed polygons of circles.	5		☆		✓		F
22.0 Students know the effect of rigid motions on figures in the coordinate plane and space, including rotations, translations, and reflections.	3		☆		✓		F

** Fractional values indicate rotated standards (e.g., 1/2 = rotated every two years)

☆ Identifies the key standards according to Mathematics Framework for California Public Schools.

First Benchmark Test = 30 question

Second Benchmark Test = 58 questions