Texas Tenth Grade Mathematics Guidelines Checklist

Geometry (111.41)

Mathematical Process Standards

- ❑ Apply mathematics to real-world problems.
- ❑ Use appropriate strategies to solve problems.
- ❑ Select tools and technology as needed.
- ❑ Communicate mathematical ideas clearly.
- ❑ Use mathematical language to make connections.

Geometric Reasoning

- ❑ Use inductive and deductive reasoning.
- ❑ Understand and apply definitions, postulates, and theorems.
- ❑ Identify and justify congruence in geometric figures.
- ❑ Prove geometric relationships using logical reasoning.

Proof and Congruence

- ❑ Prove triangles congruent (SSS, SAS, ASA, AAS, HL).
- ❑ Use properties of parallel lines and angles.
- ❑ Apply triangle inequality theorem.

Similarity, Proof, and Trigonometry

- ❑ Prove triangles similar.
- ❑ Use ratios and proportions to solve geometric problems.
- ❑ Apply trigonometric ratios (sine, cosine, tangent).
- ❑ Solve problems involving right triangles.

Two- and Three-Dimensional Figures

- ❑ Understand and calculate perimeters, areas, and volumes.
- ❑ Use formulas for surface area and volume.
- ❑ Apply geometric models in problem-solving.

Coordinate and Transformational Geometry

- ❑ Use coordinate plane to prove geometric relationships.

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- ❑ Graph and apply transformations (translations, rotations, reflections, dilations).
- ❑ Verify properties of geometric figures on the coordinate plane.

Measurement and Dimensional Analysis

- ❑ Convert units within and between systems.
- ❑ Use scale factors and ratios in models.
- ❑ Apply geometric concepts to solve measurement problems.