

**Geometry, Second Semester
Unique #99627**

Understanding CBE/EA requirements

Before you take the Geometry, Second Semester Credit by Examination/ Examination for Acceleration from The University of Texas Distance Education Center (DEC), here are some things you need to know. You have **sixty** days from the date of registration to take the exam.

Successfully completing the Geometry, Second Semester CBE/EA will earn you one-half unit of high school credit for the course. This review sheet can help you prepare for the exam, by giving you an idea of what you need to study, review, and learn. To succeed, you should be thoroughly familiar with the subject matter before you attempt to take the exam.

Please note that exams and review sheets are updated regularly. When you take the exam, you need to bring your confirmation letter, because it contains the unique number that indicates which edition of the exam you will take. Your grade will be available two to three weeks after you take the exam.

When you take the exam, please be prepared to show your competence and understanding of the Texas Essential Knowledge and Skills (TEKS) that the Texas Education Agency has specified for the course. Because this CBE/EA review sheet may not refer to all the material that will be in the exam, you should use the complete TEKS for Geometry, Second Semester to guide your exam preparation. You can view these TEKS online at <http://www.tea.state.tx.us/teks/>

Preparing for the exam

The prerequisite for the second semester of Geometry are Algebra 1 and the first semester of Geometry. It is assumed that the objectives for both semesters of Algebra 1 have been mastered, along with the objectives of the first semester of Geometry.

To prepare for the exam, you may use any Texas state-adopted textbook for high school Geometry. The exam does not refer to any particular text, but it

requires that you know the important concepts and objectives covered in the course, as outlined by the TEKS. If you wish, you may choose to prepare with the state-adopted textbook used for Geometry B.

- **Concepts and objectives**

Second-semester Geometry helps people solve problems efficiently and analyze geometric drawings. The use of problem-solving skills is important; all problem-solving activities require more than one step. In addition, you may be asked to use algebra and arithmetic skills from previous math courses.

No part of the examination will require a calculator. All necessary tables will be provided. However, a calculator may be used instead of the tables to do the calculations more rapidly.

As you prepare for the Geometry B CBE/EA, please keep in mind that you will be asked to show mastery of the following concepts and objectives.

- Apply the Triangle Inequality Theorem.
- Determine if a triangle can be formed from three given lengths.
- Use the lengths of two sides of a triangle to describe the length of the third side.
- Identify corresponding parts of polygons.
- Use the SSS and SAS Postulates.
- Prove triangles are congruent without proving all corresponding parts are congruent.
- Use the ASA Postulate, the AAS Theorem, and the HL Theorem.
- Prove that triangles are congruent.
- Use triangulation to find the position of distant objects.
- Use corresponding parts of congruent triangles.
- Write proofs that use congruent triangles to prove other statements.
- Measure distance indirectly.
- Apply the Isosceles Triangle Theorem and its converse.
- Find measures in isosceles triangles, and write proofs using isosceles triangles.
- Identify and draw medians and altitudes of triangles.
- Explore the properties of medians and altitudes in triangles.
- Identify quadrilaterals by using their properties.
- Recognize the relationships between the diagonals of special quadrilaterals.
- Tell whether a quadrilateral is a parallelogram.
- Write indirect proofs.

- Classify parallelograms using their properties.
- Prove that figures are special types of parallelograms.
- Find the areas of regular polygons and quadrilaterals.
- Use the formulas for finding the areas of triangles and quadrilaterals.
- Find the areas of regular polygons and circles.
- Use area formulas of regular polygons and circles to find areas in problems.
- Analyze the parts of prisms and cylinders.
- Find the volumes, lateral areas, and surface areas of prisms and cylinders.
- Draw the reflections of a polygon and a line of reflection for a figure and its image.
- Find the coordinates of a polygon reflected over the x -axis, the y -axis, and the line $y = x$.
- Describe how coordinates change after reflections.
- Explore situations involving reflections that can be modeled on a coordinate plane.
- Find the coordinates of the image of a figure after a translation.
- Describe a translation based on an original figure and its image.
- Describe patterns that involve translation.
- Use ratios and proportions to find measures of similar figures.
- Identify similar figures.
- Use special rules to identify similar triangles.
- Write proofs involving similar triangles.
- Write many different proportions using the sides of similar figures.
- Find the lengths and measures in similar polygons.
- Compare measures of similar figures.
- Find perimeters, areas, and volumes of similar figures.
- Recognize relationships among the triangles formed by the altitudes to the hypotenuse of a right triangle.
- Find the geometric mean of two numbers.
- Use similar right triangles to estimate lengths.
- Find the relationship of side lengths in $45\text{-}45\text{-}90^\circ$ triangles and in $30\text{-}60\text{-}90^\circ$ triangles.
- Find the lengths and distances in problems involving special right triangles, squares, and equilateral triangles.
- Find the tangent of an acute angle.
- Use tangents to find lengths and angle measures in right triangles.
- Solve problems involving angles and lengths in right triangles.
- Find the sine and cosine of an acute angle.
- Find the measure of an acute angle whose sine or cosine is given.

- Find the lengths of the sides of right triangles.
- Solve problems using sines and cosines.
- Identify vector quantities and express them in component form.
- Use trigonometry to find areas of polygons and volumes of prisms.
- Find areas using trigonometry.
- Apply formulas for surface areas and volumes of pyramids and cones.
- Analyze pyramids and cones.
- Identify types of arcs and angles in a circle.
- Find the measures of arcs and angles.
- Find arc and angle measures when segments intersect circles.
- Solve problems involving segments that intersect circles.
- Identify relationships among arcs and chords of circles.
- Solve problems involving arcs and chords of circles.
- Find lengths of segments formed by chords, tangents, and secants.
- Solve problems involving arcs and chords of circles.
- Find lengths of segments formed by chords, tangents, and secants.
- Solve problems involving lengths of segments in circles.
- Find lengths of arcs and areas of sectors.
- Find lengths and areas.
- Calculate the surface area and volume of a sphere.
- Compare volumes and surface areas of similar solids.
- Estimate measures.
- Represent lines and shapes on a sphere.
- Explore the geometry of spheres.

- **Time for the exam**

You will be allowed **3 hours** to take the exam.

- **Types of questions**

multiple-choice questions 11 questions, 2 points each	22%
short-answer problems 10 questions, 3 points each	30%
problem-solving activities, with more than one step 12 questions, 4 points each	48%
	Total 100%

• **Sample exam**

Be sure to take this sample exam, for a better idea of the types of questions you will find on the exam. An example of each type of question is given below.

I. Multiple-Choice Questions (2 points each)

Solve each problem in the space provided. Circle the letter of the correct answer.

1. The positive geometric mean of 4 and 16 is
 - A. 8.
 - B. 10.
 - C. 20.
 - D. 64.

Solution:

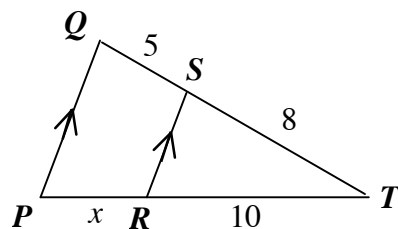
$$\frac{4}{m} = \frac{m}{16}$$
$$m^2 = 64$$
$$m = 8$$

The correct answer is A.

II. Short-Answer Problems (3 points each)

Each problem requires a solution. The problems should be worked in the space provided, since partial credit may be given. The solution, or answer, should be indicated clearly (for example, with a box, a circle, underlining).

2. In the figure, find the value of x .



Solution:

$$\text{Given: } \overline{QP} \parallel \overline{SR}$$

$$\frac{QS}{PR} = \frac{ST}{RT}$$

$$\frac{5}{x} = \frac{8}{10}$$

$$8x = 50$$

$$x = 6.25$$

III. Problem-Solving Activities (4 points each)

Solve the problem and show your work in the space provided, since partial credit may be awarded.

3. Find the volume of a right cone where the radius is 6 cm and the height is 8 cm.

$$\text{Solution: } V = \frac{1}{3} \pi r^2 h$$

$$V = \frac{1}{3} \pi 6^2 8$$

$$V = 96\pi \text{ cm}^2, \text{ or } 301.6 \text{ cm}^2$$

The volume of the cone is $96\pi \text{ cm}^2$, or 301.6 cm^2 .

Bringing identification and materials for the exam

- **Required photo identification**

Students must present an official ID (driver's license, school ID, an ID from the Department of Public Safety, or passport) with photo and signature.

For more information about acceptable forms of identification, you can call the Distance Education Testing Center (512-471-6030 or 1-888-232-4723).

- **Authorized materials for the exam**

Bring with you two sharpened number 2 pencils with erasers. Other materials:

1. You may bring a non-programmable calculator to assist with any necessary computations and graphing techniques.
2. A table of trigonometric functions, by degrees, is enclosed at the end of the test. You may use it instead of a calculator.
3. You must bring a ruler or straightedge and compass to assist you in completing your constructions and making neat graphs and drawings.
4. A sheet of graph paper will be enclosed in your exam. Additional graph paper will be provided.

You will not be allowed to bring any other items into the exam area.

Meeting requirements for taking the exam

- **Required score (CBE)**

If you have had previous instruction in the grade or course and are testing to complete requirements and gain credit, you must score a minimum of 70%.

- **Required score (EA)**

If you are taking the Examination for Acceleration (skipping a grade or a required course), you must score at least 90% to earn credit in the state of Texas.

- **Refund policy**

The \$30 fee for the Credit by Examination or Examination for Acceleration is not refundable or transferable to another person or another subject.

- **Test proctor and location**

You are responsible for arranging a testing time, in advance, with the counselor or test supervisor in your school or alternate test site.

If you plan to test in the Distance Education Center at The University of Texas at Austin, please register for your exam at least 24 hours in advance of your desired testing date. Schedule your exam so that you will have plenty of time to take the test in one sitting.

The times for sitting are listed at the Testing link of the Distance Education Center's Credit by Examination/Examination for Acceleration web link.

Saturday testing is available once a month, by appointment only. Please call 512-471-6030 or 1-888-232-4723 to schedule an appointment for a Saturday testing session.

- **Obtaining grades by phone**

In compliance with the Family Education Rights and Privacy Act (FERPA), no information will be released over the telephone without your assigned Personal Identification Number. You will find this PIN on your enrollment receipt.

- **Re-examination**

There is no re-examination available for an Examination for Acceleration.

If you score less than the minimum of 70% required to pass a Credit by Examination, a re-examination is available for a \$30 fee. Re-examination will be administered only after you have received an official notification that the first exam score was below 70%.