Geometry CBE Practice Exam (Sample)

Study Guide

Everything you need from our exam experts!

Sample study guide. For the full version with hundreds of questions, visit: https://geometrycbe.examzify.com

Copyright © 2026 by Examzify - A Kaluba Technologies Inc. product.

ALL RIGHTS RESERVED.

No part of this book may be reproduced or transferred in any form or by any means, graphic, electronic, or mechanical, including photocopying, recording, web distribution, taping, or by any information storage retrieval system, without the written permission of the author.

Notice: Examzify makes every reasonable effort to obtain accurate, complete, and timely information about this product from reliable sources.

SAMPLE

Table of Contents

SAMPLE

Introduction

Preparing for a certification exam can feel overwhelming, but with the right tools, it becomes an opportunity to build confidence, sharpen your skills, and move one step closer to your goals. At Examzify, we believe that effective exam preparation isn't just about memorization, it's about understanding the material, identifying knowledge gaps, and building the test-taking strategies that lead to success.

This guide was designed to help you do exactly that.

Whether you're preparing for a licensing exam, professional certification, or entry-level qualification, this book offers structured practice to reinforce key concepts. You'll find a wide range of multiple-choice questions, each followed by clear explanations to help you understand not just the right answer, but why it's correct.

The content in this guide is based on real-world exam objectives and aligned with the types of questions and topics commonly found on official tests. It's ideal for learners who want to:

- **Practice answering questions under realistic conditions,**
- **Improve accuracy and speed,**
- **Review explanations to strengthen weak areas, and**
- **Approach the exam with greater confidence.**

We recommend using this book not as a stand-alone study tool, but alongside other resources like flashcards, textbooks, or hands-on training. For best results, we recommend working through each question, reflecting on the explanation provided, and revisiting the topics that challenge you most.

Remember: successful test preparation isn't about getting every question right the first time, it's about learning from your mistakes and improving over time. Stay focused, trust the process, and know that every page you turn brings you closer to success.

Let's begin.

SAMPLE

How to Use This Guide

This guide is designed to help you study more effectively and approach your exam with confidence. Whether you're reviewing for the first time or doing a final refresh, here's how to get the most out of your Examzify study guide:

1. Start with a Diagnostic Review

Skim through the questions to get a sense of what you know and what you need to focus on. Your goal is to identify knowledge gaps early.

2. Study in Short, Focused Sessions

Break your study time into manageable blocks (e.g. 30 – 45 minutes). Review a handful of questions, reflect on the explanations.

3. Learn from the Explanations

After answering a question, always read the explanation, even if you got it right. It reinforces key points, corrects misunderstandings, and teaches subtle distinctions between similar answers.

4. Track Your Progress

Use bookmarks or notes (if reading digitally) to mark difficult questions. Revisit these regularly and track improvements over time.

5. Simulate the Real Exam

Once you're comfortable, try taking a full set of questions without pausing. Set a timer and simulate test-day conditions to build confidence and time management skills.

6. Repeat and Review

Don't just study once, repetition builds retention. Re-attempt questions after a few days and revisit explanations to reinforce learning. Pair this guide with other Examzify tools like flashcards, and digital practice tests to strengthen your preparation across formats.

There's no single right way to study, but consistent, thoughtful effort always wins. Use this guide flexibly, adapt the tips above to fit your pace and learning style. You've got this!

SAMPLE

Questions

SAMPLE

1. **Which equation represents the point-slope form of a line with slope m passing through (x1, y1)?**

   A. Y - y1 = m(x - x1)

   B. Y = mx + b

   C. Ax + By = C

   D. Y = y1 + mX

2. **Which statement reflects the Hinge Theorem?**

   A. If two triangles have two corresponding sides congruent and the included angle of the first is larger, then the third side of the first is longer

   B. If two triangles have two corresponding sides congruent and the included angle of the first is smaller, then the third side of the first is longer

   C. If two triangles have two corresponding sides congruent and the included angle is equal, the third sides are equal

   D. If two triangles have two corresponding sides not congruent, nothing can be said about the third sides

3. **In a right triangle, the two acute angles sum to how many degrees?**

   A. The two acute angles in a right triangle sum to 180 degrees.

   B. The two acute angles in a right triangle sum to 90 degrees.

   C. All three interior angles sum to 360 degrees.

   D. The right angle plus one acute angle equals 90 degrees.

4. **What is the inverse of the conditional statement 'If p, then q'?**

   A. If not p, then not q

   B. If q, then p

   C. If not q, then not p

   D. If p, then q

5. **When two parallel lines are cut by a transversal, same-side interior angles are**

   A. Congruent

   B. Supplementary

   C. Complementary

   D. Vertical

SAMPLE

6. Which option is NOT a valid congruence criterion for triangles?

A. AAA

B. SSS

C. SAS

D. ASA

7. Which statement represents the Triangle Sum Theorem?

A. The exterior angles add to 360 degrees.

B. All angles are 60 degrees.

C. The interior angles add to 180 degrees.

D. The sum is 90 degrees.

8. If sin θ = 3/5, then csc θ equals

A. 5/3

B. 3/5

C. -5/3

D. -3/5

9. Which statement describes the relationship of alternate exterior angles when two lines are parallel and cut by a transversal?

A. They are congruent.

B. They are supplementary.

C. They are perpendicular.

D. They are vertical angles.

10. Which statement about parallelogram diagonals is true?

A. Diagonals bisect each other

B. Diagonals are perpendicular

C. Diagonals are equal in length

D. Diagonals do not intersect

SAMPLE

Answers

SAMPLE

1. **A**
2. **A**
3. **B**
4. **A**
5. **B**
6. **A**
7. **C**
8. **A**
9. **A**
10. **A**

SAMPLE

Explanations

SAMPLE

1. Which equation represents the point-slope form of a line with slope m passing through (x1, y1)?

A. Y - y1 = m(x - x1)

B. Y = mx + b

C. Ax + By = C

D. Y = y1 + mX

The main idea here is that the point-slope form writes a line using its slope and a specific point it passes through. If the slope is m and the line goes through (x1, y1), the equation is y − y1 = m(x − x1). This form makes it immediate to plug in the known point and slope, and it shows exactly how moving along x from x1 changes y by m times that distance. This form is the best fit because it directly encodes both pieces of information given in the problem: the slope and the point the line passes through. A slope-intercept form, y = mx + b, involves the y-intercept b, which isn't given here and doesn't guarantee the line passes through the designated point. A general form like Ax + By = C is not expressed in terms of a slope and a specific point. The expression y = y1 + mX is not correct because it doesn't subtract the x-coordinate x1, so it doesn't ensure the line passes through (x1, y1) in general. As a quick check, you can derive the point-slope form from the slope-intercept form by using the point (x1, y1) on the line: starting with y = mx + b and substituting y1 = m x1 + b gives b = y1 − m x1, and substituting back yields y = m x + (y1 − m x1), which rearranges to y − y1 = m(x − x1).

2. Which statement reflects the Hinge Theorem?

A. If two triangles have two corresponding sides congruent and the included angle of the first is larger, then the third side of the first is longer

B. If two triangles have two corresponding sides congruent and the included angle of the first is smaller, then the third side of the first is longer

C. If two triangles have two corresponding sides congruent and the included angle is equal, the third sides are equal

D. If two triangles have two corresponding sides not congruent, nothing can be said about the third sides

The hinge theorem says that if two triangles share two congruent sides, the one with a larger angle between those sides has the longer third side. Picture two fixed-length segments joined at a common vertex; widening the angle between them pushes their outer endpoints farther apart, so the distance between those endpoints—the third side—gets bigger. Algebraically, if the two fixed sides are a and b in both triangles and their included angles are C and C', then c^2 = a^2 + b^2 - 2ab cos C and c'^2 = a^2 + b^2 - 2ab cos C'. When C > C', cos C < cos C', making c > c'. This matches the statement that the first triangle's third side is longer when its included angle is larger, given the two corresponding sides are congruent. If the included angle were equal, SAS would make the triangles congruent and their third sides equal, which is a related special case but not the comparison the hinge theorem specifically describes.

SAMPLE

3. In a right triangle, the two acute angles sum to how many degrees?

A. The two acute angles in a right triangle sum to 180 degrees.

B. The two acute angles in a right triangle sum to 90 degrees.

C. All three interior angles sum to 360 degrees.

D. The right angle plus one acute angle equals 90 degrees.

In any triangle, the interior angles add up to 180 degrees. A right triangle has one angle measuring 90 degrees, so the other two angles must sum to 180 − 90 = 90 degrees. Those two angles are the acute angles, and since they add to 90, they are complementary. That's why the two acute angles in a right triangle total 90 degrees. (They can't sum to 180, which would leave no room for the third angle, and 90 plus an acute angle isn't 90 since the acute angle is positive.)

4. What is the inverse of the conditional statement 'If p, then q'?

A. If not p, then not q

B. If q, then p

C. If not q, then not p

D. If p, then q

The main idea is that the inverse of a conditional keeps the same structure but negates both parts. For "If p, then q," you switch p to not p and q to not q while keeping the order, giving "If not p, then not q." That's why this form is the correct one. It's the statement you get when you ask what happens if p doesn't happen: then q also doesn't happen. It's distinct from the converse (which would swap p and q: "If q, then p") and from the contrapositive (which negates both parts but reverses them: "If not q, then not p," which is actually equivalent to the original). The original remains "If p, then q." A helpful mental image: p might be "you study," q might be "you pass." The original says studying implies passing. The inverse says if you don't study, you don't pass. The truth of the original doesn't guarantee the inverse, but that's a separate matter from how the inverse is formed.

SAMPLE

5. When two parallel lines are cut by a transversal, same-side interior angles are

A. Congruent

B. Supplementary

C. Complementary

D. Vertical

When two parallel lines are cut by a transversal, interior angles that lie between the lines on the same side of the transversal add up to 180 degrees. These are called same-side (or consecutive) interior angles, and they are supplementary. Think of one interior angle at the first intersection on that side. The angle next to it along the straight line at that intersection forms a linear pair, so they sum to 180 degrees. The exterior angle adjacent to the interior angle is congruent to the interior angle on the second intersection on the same side because alternate interior angles are equal when the lines are parallel. Putting those facts together, the two interior angles on the same side must sum to 180 degrees. That's why same-side interior angles are supplementary. The other options don't fit: congruent would describe alternate interior or corresponding angles, complementary would sum to 90, and vertical angles are opposite angles at a single intersection.

6. Which option is NOT a valid congruence criterion for triangles?

A. AAA

B. SSS

C. SAS

D. ASA

Two triangles are congruent when they match exactly in size and shape. That requires information that fixes both how big they are and how their sides and angles relate. The standard congruence criteria—three sides, two sides with the included angle, or two angles with the included side—each provides enough information to lock in both dimensions, so the triangles are identical in every aspect. Using only angle measures, as AAA does, tells you the triangles have the same angles, so they are similar, not necessarily congruent. You can scale one triangle up or down and still preserve the same angles, which changes the side lengths while keeping the angles the same. A concrete example is a 3-4-5 right triangle and a 6-8-10 right triangle: they have the same angles but different sizes, so they aren't congruent. So the option that does not determine congruence is the one based on equal angles alone.

SAMPLE

7. Which statement represents the Triangle Sum Theorem?

A. The exterior angles add to 360 degrees.

B. All angles are 60 degrees.

C. The interior angles add to 180 degrees.

D. The sum is 90 degrees.

Inside any triangle drawn on a flat plane, the three interior angles always add up to 180 degrees. This is the Triangle Sum Theorem. A clear way to see it is to label the triangle as A, B, C and draw a line through A that is parallel to BC. Because of parallel lines, the angle at B matches the angle formed by AB with that parallel line, and the angle at C matches the angle formed by AC with that parallel line. The three angles along that straight line add up to 180 degrees, so angle A plus angle B plus angle C equals 180 degrees. That makes the statement about the interior angles summing to 180 degrees the correct description of the theorem. The other ideas don't hold in general: not all triangles have angles of 60 degrees, the sum is not 90 degrees, and exterior angles summing to 360 degrees describe a different property.

8. If sin θ = 3/5, then csc θ equals

A. 5/3

B. 3/5

C. -5/3

D. -3/5

csc θ is the reciprocal of sin θ. So csc θ = 1 / sin θ. If sin θ = 3/5, then csc θ = 1 / (3/5) = 5/3. The sign follows sin, and since sin θ is positive, csc θ is also positive. The value is 5/3.

9. Which statement describes the relationship of alternate exterior angles when two lines are parallel and cut by a transversal?

A. They are congruent.

B. They are supplementary.

C. They are perpendicular.

D. They are vertical angles.

When two lines are parallel and a transversal cuts them, the angles outside the lines on opposite sides of the transversal have equal measures. This happens because the transversal creates corresponding angles that are equal on each intersection, and the alternate exterior pair matches those corresponding positions across the two intersections, so their measures must be the same. In other words, the tilt created by the transversal is the same at both intersections, leading to congruent alternate exterior angles. They're not necessarily 90 degrees, not vertical angles (which are opposite at the same intersection), and not inherently supplementary.

SAMPLE

10. Which statement about parallelogram diagonals is true?

A. Diagonals bisect each other

B. Diagonals are perpendicular

C. Diagonals are equal in length

D. Diagonals do not intersect

In a parallelogram, diagonals bisect each other. When the two diagonals cross, the parallel opposite sides create pairs of congruent triangles around the intersection. Those congruent triangles force the point where the diagonals cross to be the midpoint of each diagonal, so each diagonal is split into two equal halves at the intersection. That means the diagonals are not necessarily perpendicular, nor are they necessarily equal in length. They do intersect, which is also true, but the defining property here is that the intersection point divides both diagonals into equal segments.

SAMPLE

Next Steps

Congratulations on reaching the final section of this guide. You've taken a meaningful step toward passing your certification exam and advancing your career.

As you continue preparing, remember that consistent practice, review, and self-reflection are key to success. Make time to revisit difficult topics, simulate exam conditions, and track your progress along the way.

If you need help, have suggestions, or want to share feedback, we'd love to hear from you. Reach out to our team at hello@examzify.com.

Or visit your dedicated course page for more study tools and resources:

https://geometrycbe.examzify.com

We wish you the very best on your exam journey. You've got this!

SAMPLE